Indian Chrome Industry and Stainless Steel: Looking Ahead

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Outline

• Global and Indian Chrome Ore, Ferro Chrome Production

• Global and Indian Stainless Steel Scenario

• New Government, New Opportunities

• Forecast: Stainless Steel output 2020

• Conclusion
Global and Indian Chrome Ore & Ferro Chrome Production
• 96% of total chrome ore production is used in metallurgical applications in 2014.
• High-carbon ferrochrome & charge chrome production represents 94% of global ferrochrome production in 2014.
• Around 3 quarters of ferrochrome production is used to produce stainless steel.
• Chrome ore, ferrochrome and stainless steel are highly correlated!
Functions of Chrome in Alloying of Steel

- Increase Toughness, carbide forming
  Tool & HSS, Creep and Wear Resistant steels
- Increase Hardness Penetrability
  Case Hardening, Quenched & Tempered steels
- Scale Resistance
  Heat Resisting steels

Passive layer formation
“Cr makes it stainless”
(min 10.5% Cr)
Stainless steels

60% of all “alloy” steels contain Cr

100% of stainless steels contain Cr

No Stainless!
Global Chrome Ore Production
by region 2006 – 2014

• Global chrome ore and concentrate production (est.): **29.4 MT** in 2014, **down 3%** from 2013 (30.2MT)
Global Ferrochrome Production
by region 2006 – 2014

Global ferrochrome production (est.):
11.4 MT in 2014 up 5.5 % from 2013
In 2014, India reduced its chrome ore production because of mines closure in Odisha due to mining lease renewal problems.

Sharp decline in exports after imposition of export duty (30%) & focus on value addition
India’s Ferrochrome Production and Export

Ferrochrome production in India stabilized at around 1 MT per year since 2010. About 50% domestic consumption with the rest being exported.

In 2014 Fe Cr decreased (est.): 0.82 MT down 15.8% from 2013.
Indian Ferrochromium Production follows the growth of the Indian Stainless Steel Production.
Global and Indian Stainless Steel Scenario
World : Stainless Steel Melt Production

Source : ISSF
Year 2014 in million tons
Upto - 3rd Quarter

World : Stainless Steel Melt Production

Source : ISSF
World: Stainless Steel Melt Shop Production By Grade Category %

Source: ISSF
World: Regional Share of Stainless Steel Production [ % ]

Source: ISSF

2005
- EU-27: 34%
- Americas: 3%
- Other Asia (excl. China): 11%
- China: 39%
- RoW: 13%

2013
- EU-27: 19%
- Americas: 6%
- Other Asia (excl. China): 2%
- China: 50%
- RoW: 2%

2014 up to 3rd Q
- EU-27: 19.3%
- Americas: 6.8%
- Other Asia (excl. China): 0.7%
- China: 51.9%
- RoW: 21.4%

Source: ISSF
Stainless Steel Consumption Growth
China & India vs. Rest of the World

- China: +16% p.a.
- India: +8% p.a.
- Rest of the World: +1% p.a.

Total World: +6% p.a.

Source: SMR
India: Stainless Steel Consumption Trend by End use sector

Flat Product
- Cookware and durables: 57.0%
- ART: 10.6%
- Engineering: 2.2%
- Electro Mechanical industries: 0.9%
- Process industry and Power: 16.9%
- Miscellaneous: 5.7%

Long Product
- Process industry and Power: 24.1%
- Engineering: 36.2%
- Cookware and durables: 27.8%
- Electro Mechanical industries: 1.5%
- ART: 1.2%
- Miscellaneous: 4.7%
New government and
New opportunities
India will surpass China in growth rate in 2016, says the latest World Economic Report released by International Monetary Fund on January 20, 2015.

India Already Passes China to Become Fastest-Growing Economy – World Bank (Wall Street Journal, 11th Feb)
India Budget 2015: A foundation for growth

The Finance Minister has laid out a clear roadmap with a particular focus on

- Infrastructure
- Fiscal Consolidation
- Empowerment of States
- Ease of doing business
S&P revises GDP forecast to 7.9% Expecting Indian to be Asia-Pacific region’s brightest spot. (Business Line, 26th February)

Indian Economy to Grow 7.5% in FY16: IMF – (TOI, 12th March)
India: Population 1.27 billion

By 2020, India is set to become the world’s youngest country with median age reaching 29 years

Skill, Scale and Speed

to revive India’s growth story

India has more than 65% of its population below the age of 35

Youth
The building blocks of a nation
Some Important Growth Drivers & Government of India Initiatives

Red carpet NOT Red tape

A major growth initiative every sector: Stainless Steel future linked to it
Creation of 100 smart cities
An initiative by Honorable PM of India

Key Features of these cities will be

- 24x7 availability of high quality utility services like water and power
- Transport system that emphasizes on public transport
- Proper facilities for entertainment and the Safety and Security of the people
- State-of-the-art Health and Education facilities
- Recycling of waste materials, Water conservation

Smart means ‘Use Stainless Steel’
Mid Day Meal Scheme : Stainless Steel for Hygiene

A Government of India initiative designed to improve the nutritional status of school-age children nation wide - free lunches on working days for children in Primary and Upper Primary Classes

Serving 120,000,000 children in over 1,265,000 schools

Largest such programme in the world

Image Courtesy : Naik Foundation
A National level campaign by the Government of India covering 4041 statutory towns to clean the streets, roads and infrastructure of the country

A vision of 'cleaner India' by 2 October 2019, 150th birthday of Mahatma Gandhi and is expected to cost over 62000 Cr (US$10 billion)

Public Sanitation facilities in Stainless Steel
Stainless Steel Bio Mass Stove: Toward Energy Conservation

Designed by The Energy and Resources Institute (TERI), an autonomous, not-for-profit research organization working globally with headquarters in New Delhi.

AISI 304 grade of stainless steel - inner core
AISI 202 stainless steel grade. – Rest
Total 7 kg of stainless steel per piece

Cost: 3200 INR (~ 50 US$)
Forecast: Stainless Steel output 2020
India: Forecast Stainless Steel Melt Production

Million tonnes

Year


3.1 3.3 3.6 4.0 4.3 4.7 5.2
Conclusion
• Global stainless steel production will grow in 2015 and particularly in India

• India’s per capita consumption of 1.9 kg is well below world average of 6 kg - Potential to Cover the Gap

• India GDP likely to grow 7-8 % in coming years and Domestic consumption of Stainless Steel likely to increase 9 to 10%

• New Government Initiatives like ‘Make in India’, Building Smart Cities, Focus on Sanitation Facilities are likely to benefit the stainless steel Industry.
Thank You

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