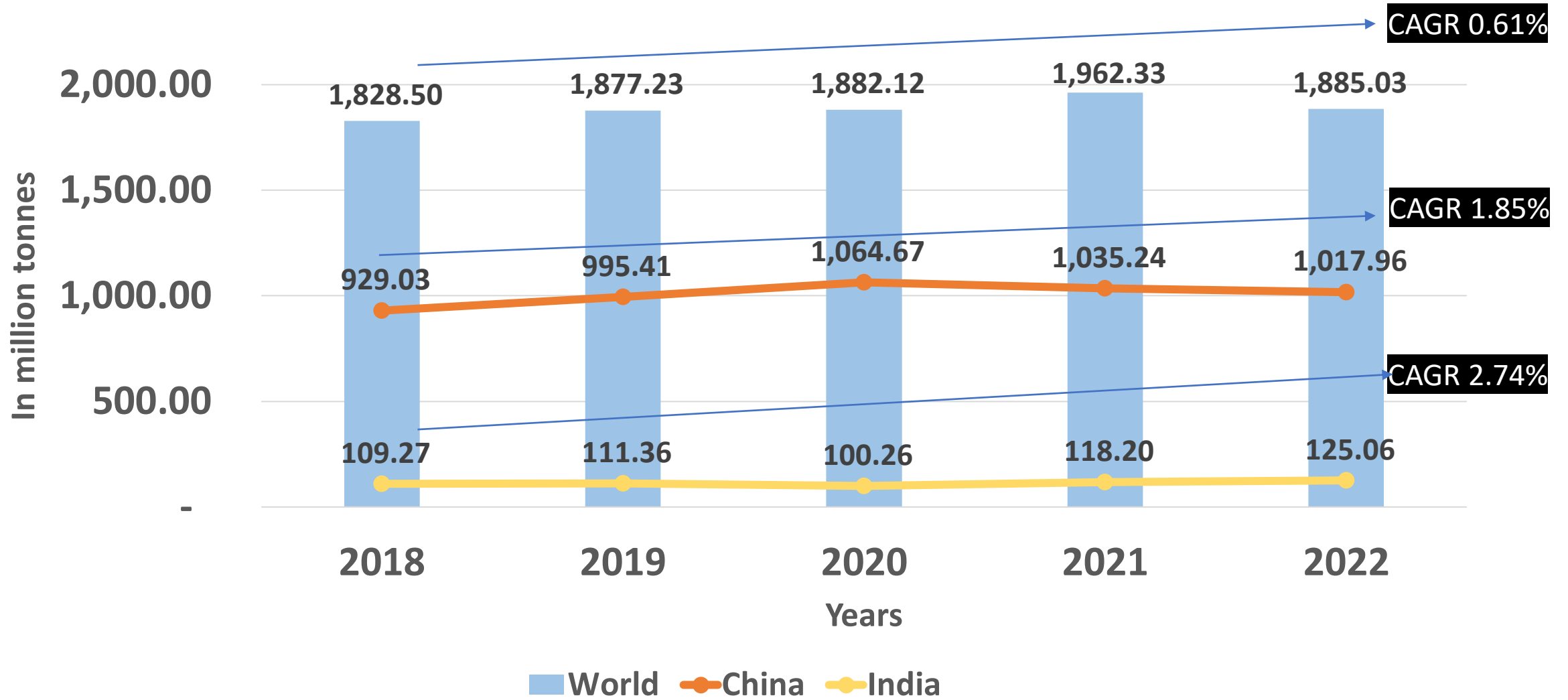


Indian Iron Ore & Steel Market Overview

Agenda for the presentation

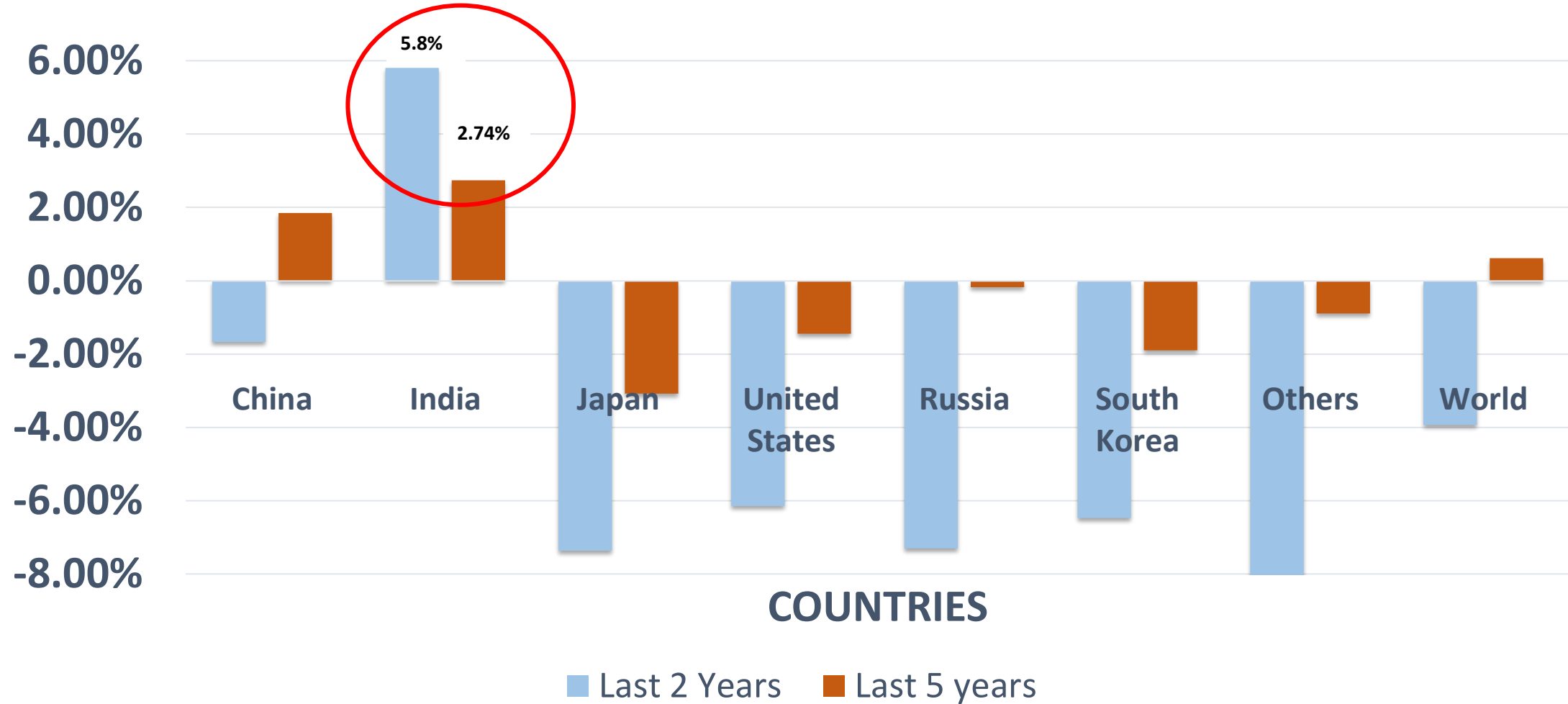
- India's Iron and Steel outlook
 - Global status
 - CAGR comparison
 - Domestic performance
 - EXIM performance
- Performance of Indian Iron ore in last 5 years
- Growth prospects of Indian Iron & Steel industry
- Demand –Supply scenario of Iron ore
- Sector wise demand for steel
- Challenges before the Steel and Iron ore industry

India's Iron & Steel Sector outlook (Global Status)



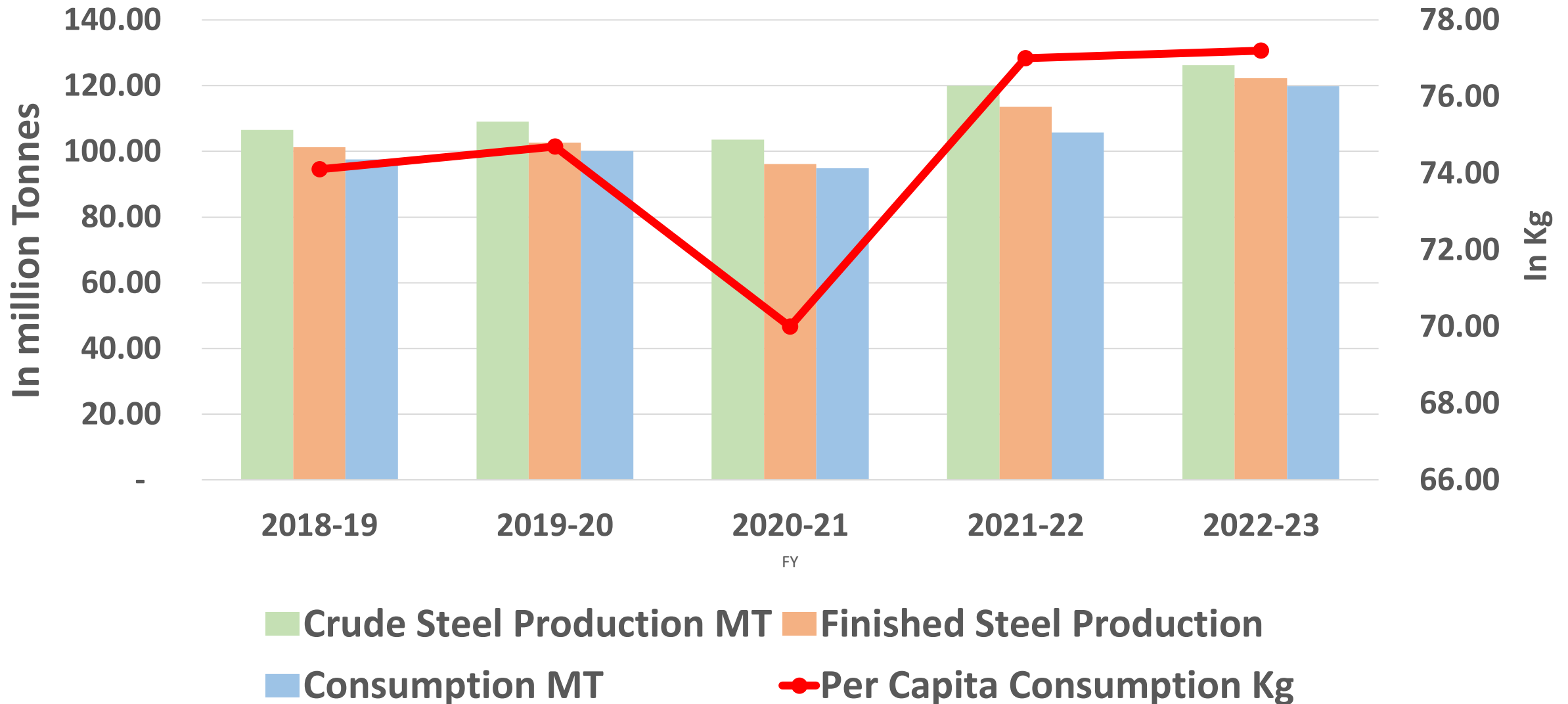
Source: World Steel Association

CAGR comparison-Steel Production

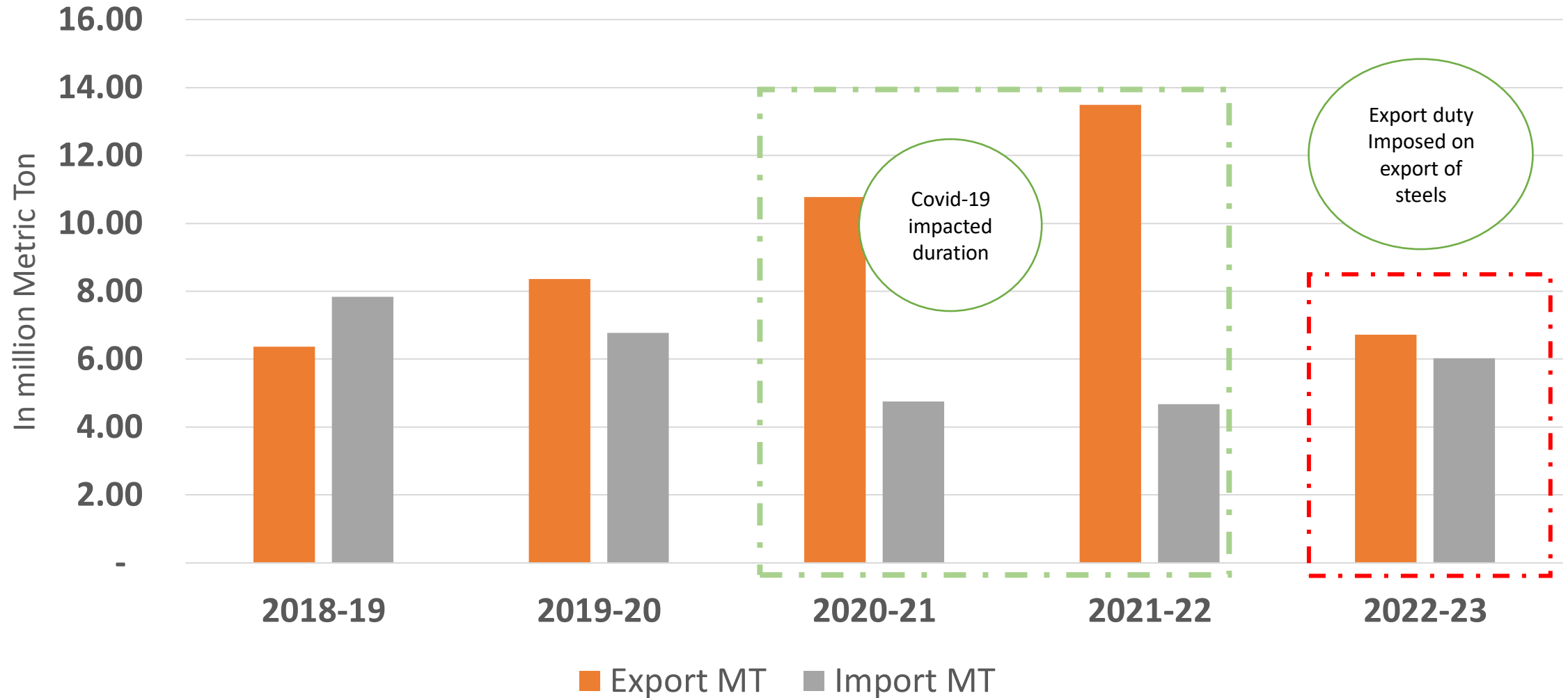


Source: World Steel Association

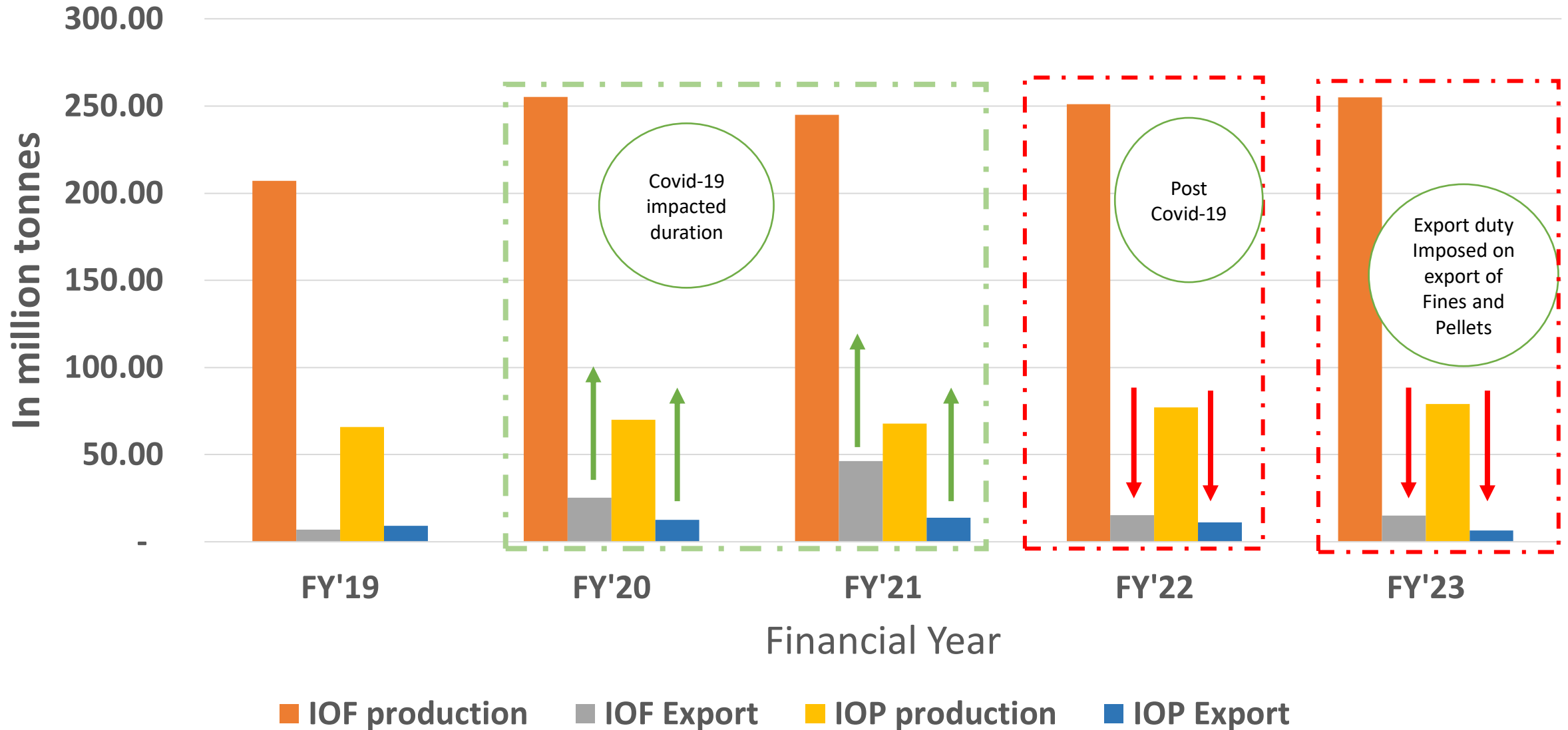
Performance of Indian Iron & Steel Industry- (Domestic)



Performance of Indian Iron & Steel Industry- (EXIM)



Performance of Indian Iron ore in last 5 years

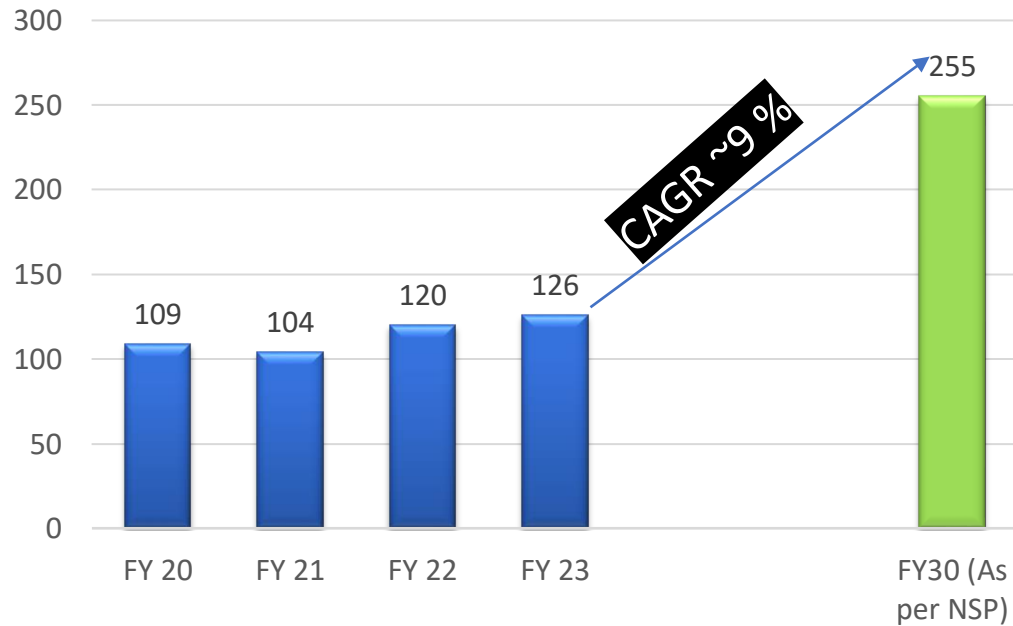


Key snapshot of NSP 2017

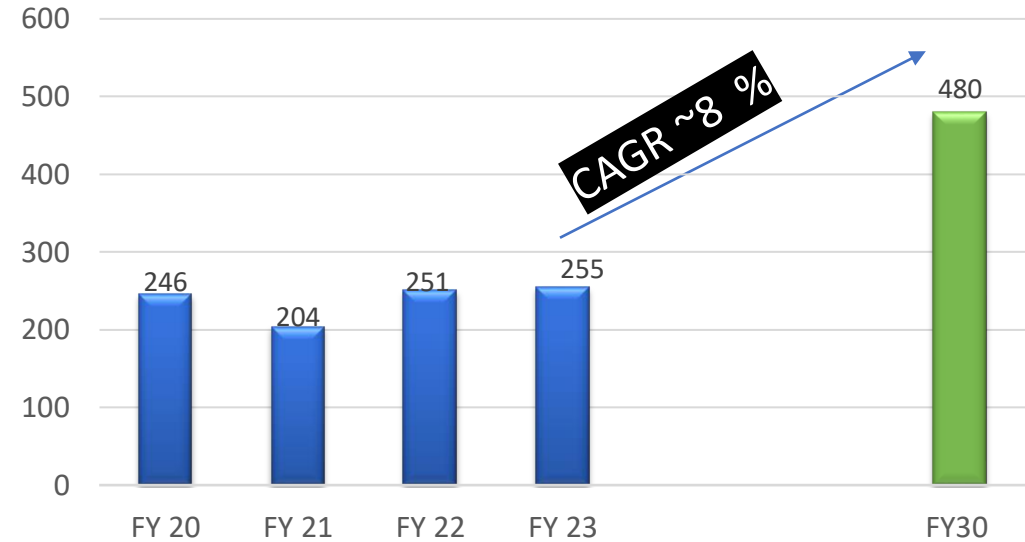
- Steel-making capacity is expected to reach 300 million tonnes per annum by FY'30.
- Crude steel production is expected to reach 255 million tonnes by FY'30, at 85% capacity utilisation.
- Production of finished steel to reach 230 million tonnes, assuming a yield loss of 10% for conversion of crude steel to finished steel – that is, a conversion ratio of 90%.
- With 24 million tonnes of net exports, consumption is expected to reach 206 million tonnes by FY'30.
- As a result, per capita steel consumption is anticipated to rise to 160 kg.

Indian Iron ore consumption will increase in line with Crude Steel Production

Crude Steel Production Estimates (MMT)



Iron ore production (MMT)



- NSP estimates the total crude steel production till FY'30 to be ~255MT.
- Demand of Steel is expected to grow 9 % CAGR in line with GDP growth to reach 255MT.

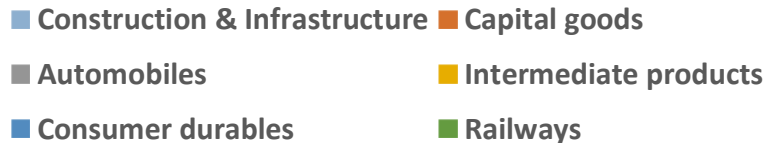
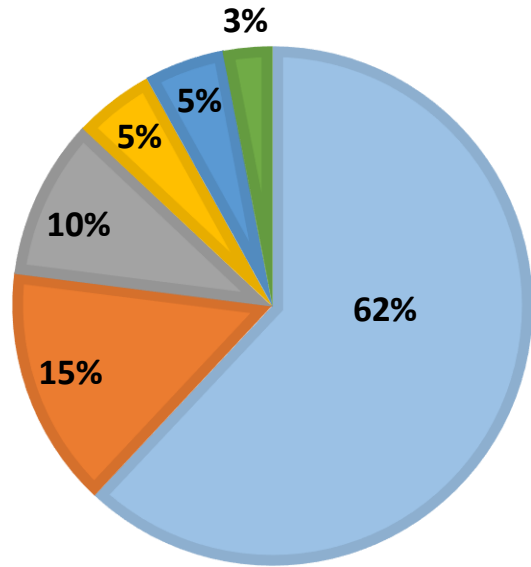
Demand and Supply Scenario- Iron Ore

Steel capacity and Iron ore production

Year	Steel Capacity	Crude Steel Production	Iron Ore demand	Iron Ore Production
FY 22	144	120	216	251
FY 30	300	255	460	480
FY 47	500	425	765	800

- India is self sufficient in Iron ore Supply.
- In FY23, production of crude steel was 126 MT, +5% growth y-o-y basis. The demand of iron ore was met domestically.
- Steel capacity has grown at CAGR of 0.86% in last 5 years from 138MT in FY19 to 144 MT in FY23
- Usage of steel scraps will increase to 15% by 2030 as envisaged in NSP 2017. As well as to meet COP 26 target, rapid growth of EAF route is expected. Present capacity by route BOF-45%, EAF-28%, IF-27%).
- To meet iron ore requirement, iron ore production has to be doubled its production by 2030 for steel capacity 300 mtpa and triple its production by 2047 for steel capacity 500 mtpa.

Sector-wise demand for steel



- **Construction & infrastructure** : Contribute 62% of India's steel demand. Demand expectation is largely from Govt. infrastructure projects like sagarmala and Bharatmala.
- **Capital goods**: The sector contribute about 15% of steel demand. the sector is dependent on construction, mining, and heavy and light industries.
- **Automobiles**: The Indian automotive industry is the fourth largest in the world. It contributes to around 10% of steel demand in India. The Government of India announced the Automotive Mission Plan 2016-26 (AMP 2026) in 2015.
- **Railways**: This sector, which contributes 3% of steel demand, is growing at a fast pace. Projects like 100% track electrification, dedicated freight corridors, connecting industrial hubs in western and eastern India and high-speed rail corridors, doubling the lines are expected to boost steel demand significantly.
- **Consumer durables and Intermediate products**: Each contributes 5% of steel demand.

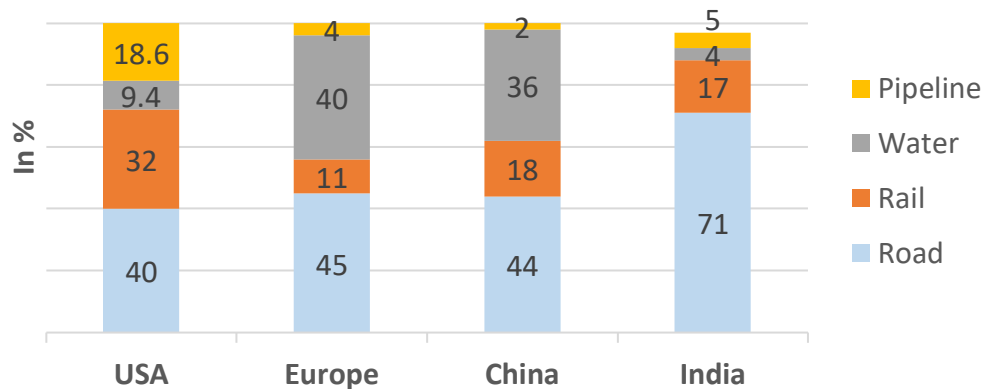
Challenges before the Steel and Iron ore Industry

(USD/Tonne)

Finance cost	30-35
Logistics & Infrastructure	20-25
Power	8-12
Duties, taxes and cesses	20-23
Total cost disadvantage	78-95

Source: Niti Aayog

Logistics Modal Mix of different countries



- **Finance cost:**
 - **Capital intensive industry**, around 6k-7k crs to set up 1 tonne of steel production capacity through greenfield route.
 - **Finance cost is higher** as compared to the cost of finance in like China, Japan and Korea.
- **Logistics and infrastructure:**
 - Location disadvantage.
 - Heavy reliant on railways to meet more than 70% of the steel transportation need.
 - Cost per MT per km of transport through Road is **INR. 3.6**, compared to **INR. 1.6** through Rail.
 - Domestic freight costs **2-3 times higher compared to China**.
 - The share of rail in freight transport is **17%** compared to **71%** of road for Iron ore transportation.
 - **Cost disadvantage USD 20-25 PMT.**
- **Power Cost:**
 - This accounts **15-20% of total cost** of steel production and consumption is directly related to the environment impact.
- **Duties and taxes:**
 - As per ISA analysis, steel makers pays about **Rs. 2750/Tonne** non-creditable taxes, duties and cesses.
 - As per Niti aayog, Indian steel makers pay and additional amount varying **USD 20-23 PMT** by ways taxes, duties and cesses.

Challenges before the Steel and Iron ore Industry



- **Input Raw material prices and availability:**
 - Although India has abundant reserves of iron ore and coal, it has negligible reserves of coking coal.
 - Heavy dependency on Australia for coking coal, there has been huge fluctuations in coking coal prices which impact the steel making cost.



- **Environmental concerns:**
 - Need of the hour, **Green steel**
 - To meet COP 26 commitment, usage of pellets and steel scraps in steel making will increase

Source: Dr. Alexander Fleischanderl, Hanspeter Ofner, Johannes Rothberger, Robert Millner, Metals Magazine, 2020,



Thank you

BainBridge Navigation Private Limited
1603, Logix City Centre, Sector 32,
Noida – 201301,
UP (Delhi – NCR), India
Switchboard : +91 1204797300
Email : india@bainbridgenav.com

BainBridge Navigation Pte. Ltd.
#19-06 & 07, Tong Eng Building,
101 Cecil Street,
Singapore – 069533
Switchboard : +65 6513 4260
Email : singapore@bainbridgenav.com

BainBridge Navigation Sdn. Bhd.
Suite 5, No. 16-G, Jalan 2/114,
Kuchai Business Centre,
Off Jalan Klang Lama,
Kuala Lumpur – 58200, Malaysia
Switchboard : +60 3 7984 7777
Email : malaysia@bainbridgenav.com

BainBridge Navigation GMBH
Kaiser Wilhelm Str 85,
20355 Hamburg,
Germany
Email : germany@bainbridgenav.com