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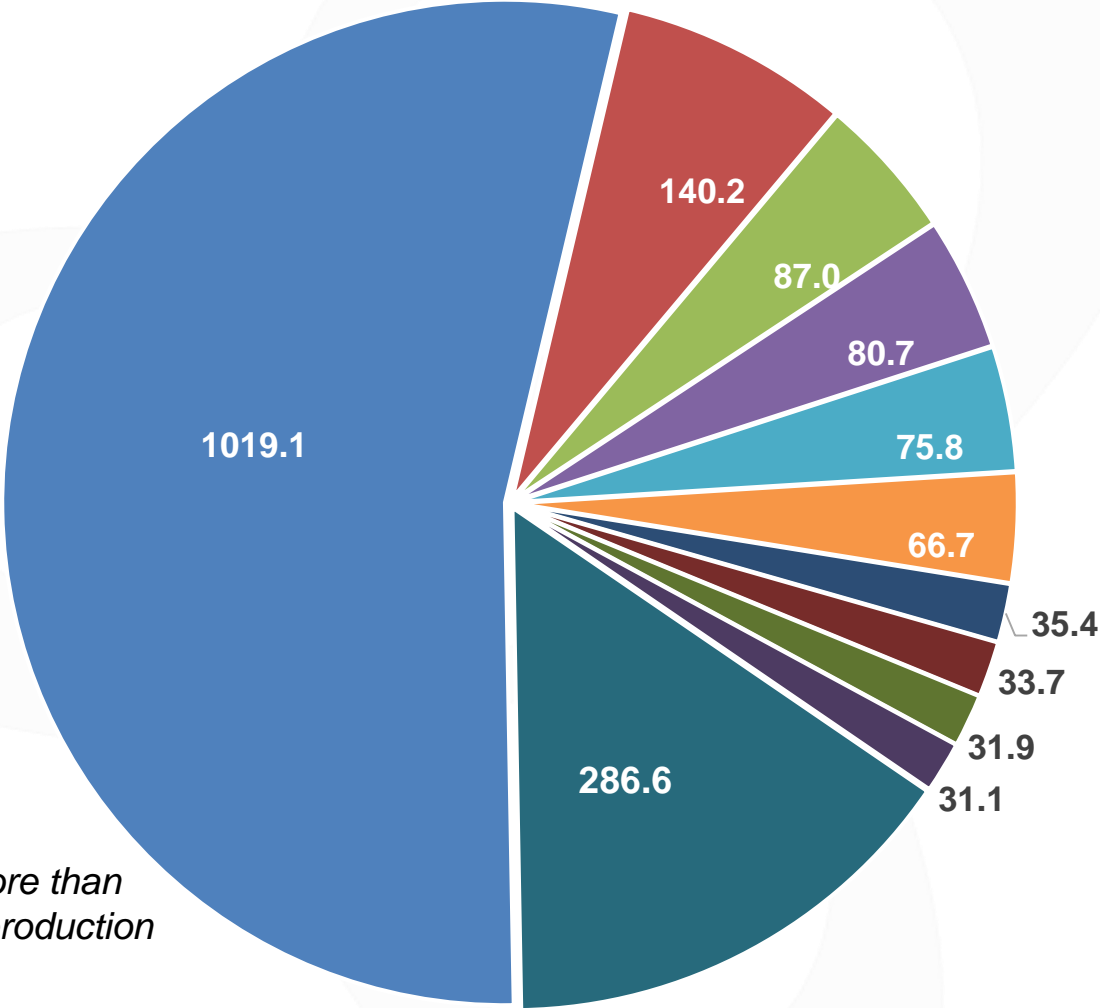
# **Demand and Supply of Iron Ores**

**K.Madhusudhana**  
Chief Executive Officer,  
MSPL Limited

# Global Steel production



Crude Steel Production

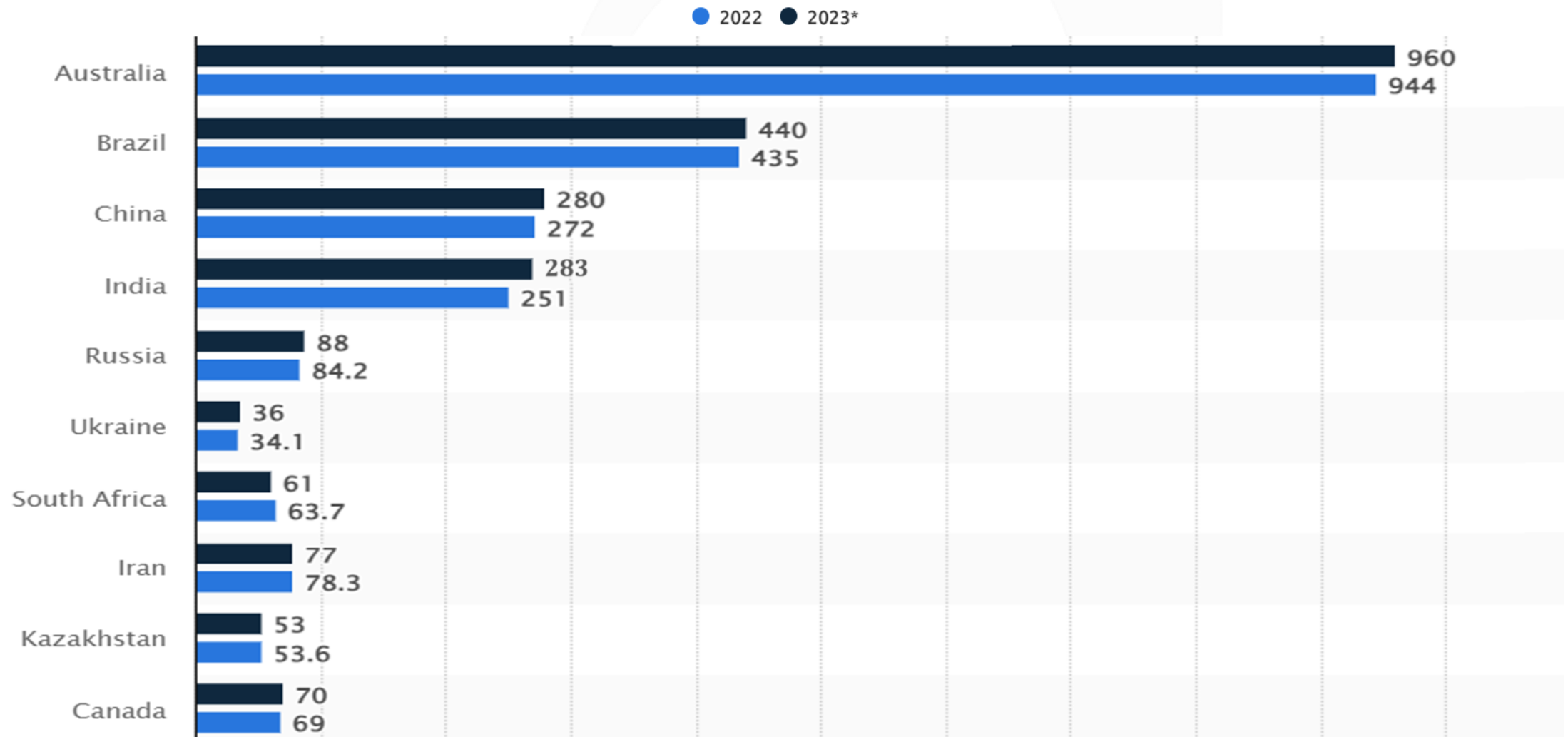


*China contributes more than 50% of global steel production*

# Global Steel production

Country Name	Crude Steel Production From (Jan-Dec'23)	Y-O-Y Change in %
China	1019.10	0.0
India	140.20	11.8
Japan	87.00	-2.5
United States	80.70	0.2
Russia	75.80	5.6
South Korea	66.70	1.3
Germany	35.40	-3.9
Turkiye	33.70	-4.0
Brazil	31.90	-6.5
Iran	31.10	1.8
Others	286.6	-0.9
<b>Total</b>	<b>1888.20</b>	<b>-0.026</b>

# Global Iron Ore production (Top 10 Countries)



*Australia and Brazil contribute about more than 60% of the global production followed by China and India*

# Apparent Steel consumption (Per Capita)

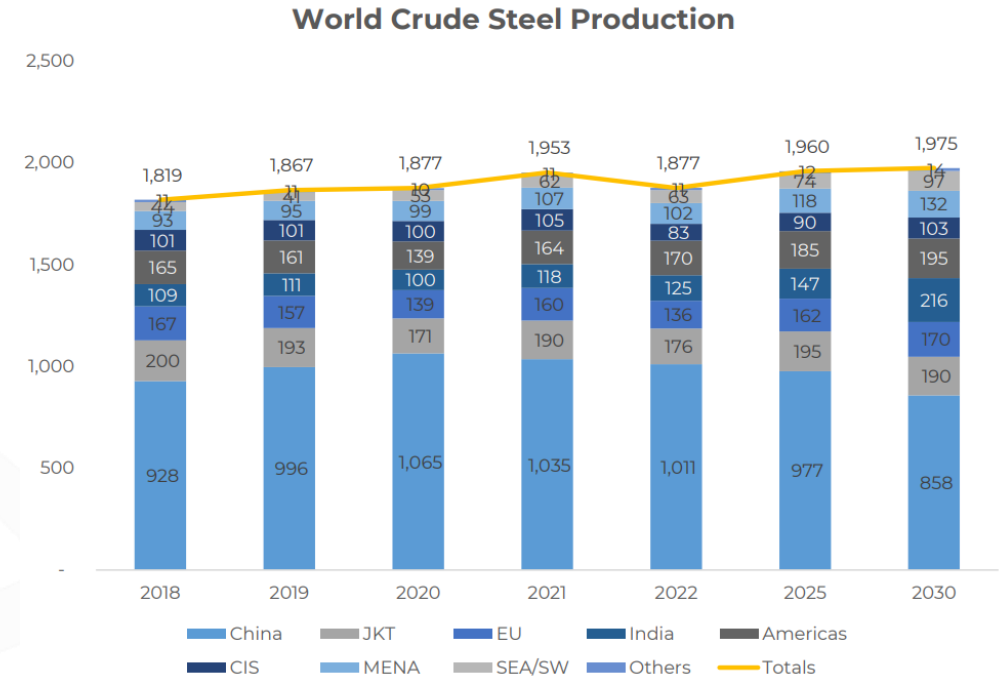
	2017	2018	2019	2020	2021
Austria	464.3	470.7	444.4	405.2	516.9
Belgium-Luxembourg	288.4	371.9	280.3	242.8	397.2
Czechia	676.6	712.6	674.8	624.3	775.5
France	227.6	228.5	223.5	187.1	211.0
Germany	496.0	477.0	420.8	371.9	426.1
Italy	409.5	417.7	412.7	337.6	439.4
Netherlands	233.9	283.3	269.9	241.7	264.4
Poland	358.4	392.8	359.8	341.1	399.7
Romania	213.2	234.4	234.4	214.5	220.6
Spain	284.2	296.4	283.3	249.0	282.2
Sweden	416.6	407.5	378.6	310.3	355.8
Other EU	242.0	261.0	259.9	246.7	263.8
European Union (27)	342.8	353.9	332.7	294.2	344.2
Turkey	445.3	372.3	312.6	349.6	394.9
United Kingdom	164.9	161.2	151.8	132.1	159.0
Others	192.6	212.3	212.7	200.5	210.6
Other Europe	295.2	266.0	235.7	243.5	276.0
Russia	279.6	283.5	298.3	290.0	305.8
Ukraine	102.5	105.8	105.8	105.2	110.3
Other CIS	88.7	92.7	97.5	101.5	92.7
Russia & Other CIS + Ukraine	186.2	189.8	198.5	195.4	200.1
Canada	382.2	380.6	347.0	323.1	384.5
Mexico	206.8	200.5	190.7	165.9	186.6
United States	300.6	305.0	296.6	241.8	290.9
USMCA	282.7	283.8	273.1	228.3	270.0

Argentina	112.0	108.8	87.5	79.5	109.7
Brazil	93.9	101.2	99.4	100.9	122.7
Venezuela	17.4	5.9	4.2	3.0	2.5
Other Central & South America	74.7	70.5	71.2	57.2	79.7
Central & South America	82.4	82.7	80.4	73.9	94.7
Egypt	105.5	112.4	103.1	94.7	97.4
South Africa	90.9	87.7	81.2	63.3	83.8
Other Africa	18.2	18.5	21.2	18.4	18.2
Africa	28.3	28.9	30.2	26.2	27.0
Iran	247.4	239.1	223.0	204.9	216.3
Other Middle East	230.5	216.9	208.5	195.4	191.5
Middle East	214.1	204.2	194.5	179.9	180.7
China	544.6	585.6	636.0	699.2	666.5
India	66.2	71.5	75.1	64.7	76.0
Japan	504.9	514.2	498.3	416.1	456.2
South Korea	1102.1	1049.6	1039.1	955.0	1075.6
Taiwan, China	745.7	749.7	740.9	789.0	885.6
Other Asia	88.1	90.0	90.8	80.1	82.8
Asia	268.5	283.7	300.9	311.8	306.2
Oceania	159.9	158.8	156.6	143.9	170.0
World	216.7	224.3	230.4	229.0	232.8

India's per capita consumption of 76 KG is way behind the global average of 233 KG

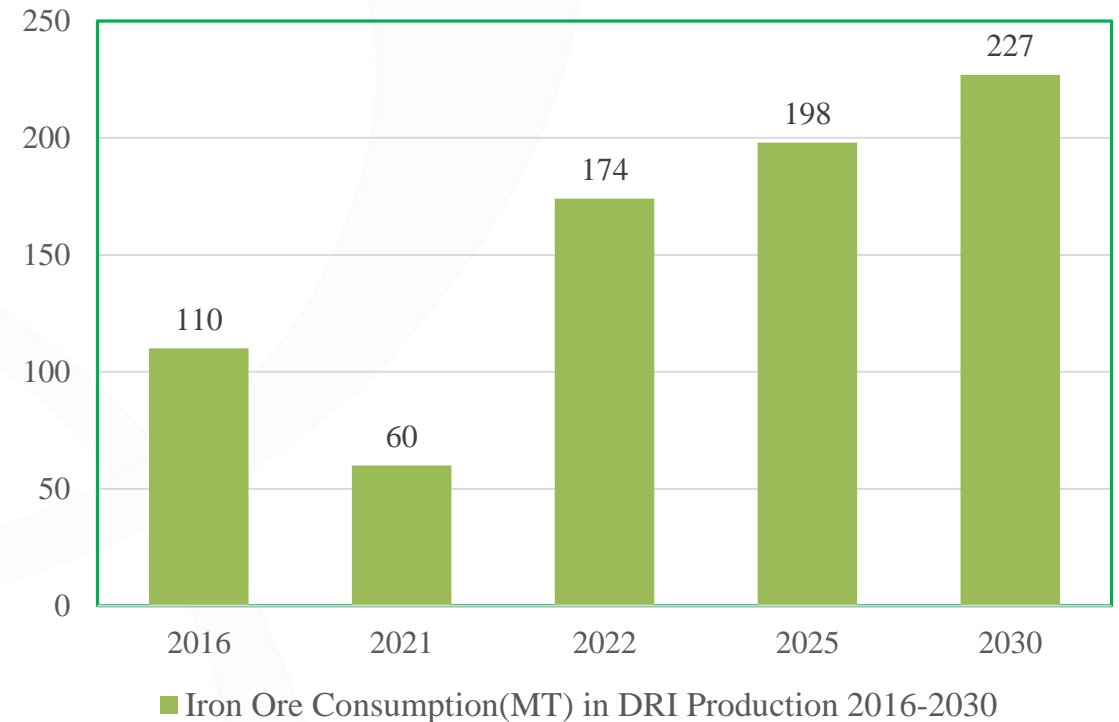
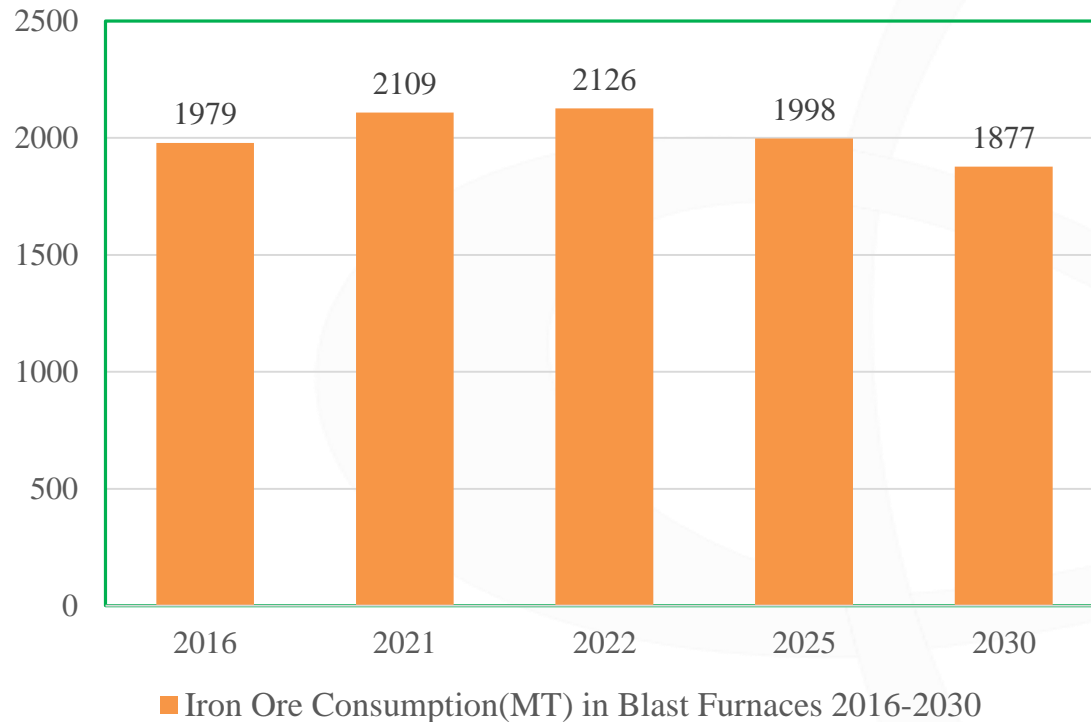
# Global Demand & Seaborne Trade – Iron Ore

Particulars	In Million tonnes			
	2022	2023 f	2024 f	2025 f
Consumption	2,300	2,269	2,238	2,196
Trade	1,574	1,605	1,645	1,669
<b>Iron ore imports</b>				
China	1,108	1,109	1,105	1,080
Japan	107	108	110	109
South Korea	69	72	75	76
Europe	114	115	120	122
<b>Iron ore exports</b>				
Australia	884	855	920	941
Brazil	344	380	378	401
South Africa	58	59	60	61
Canada	55	57	59	61
India	16	44	50	52
Ukraine	23	18	25	25



- Seaborne trade contributes 68% of global iron ore demand
- China has the largest import share of 70% of total seaborne trade followed by Japan and EU at 7% each
- Australia contributes 56% seaborne supply followed by Brazil at 21 %
- More than 70% of global iron ore trade is controlled by 3 countries i.e. China, Australia and Brazil.

# Iron Ore demand outlook – BF Vs DRI



- Growth in Electric furnace based crude steel production is expected as Asia and RoW adopts more of electric furnaces over carbon emission concerns
- Electric route crude steel production to go up from 29% in 2022 to 40% in 2030

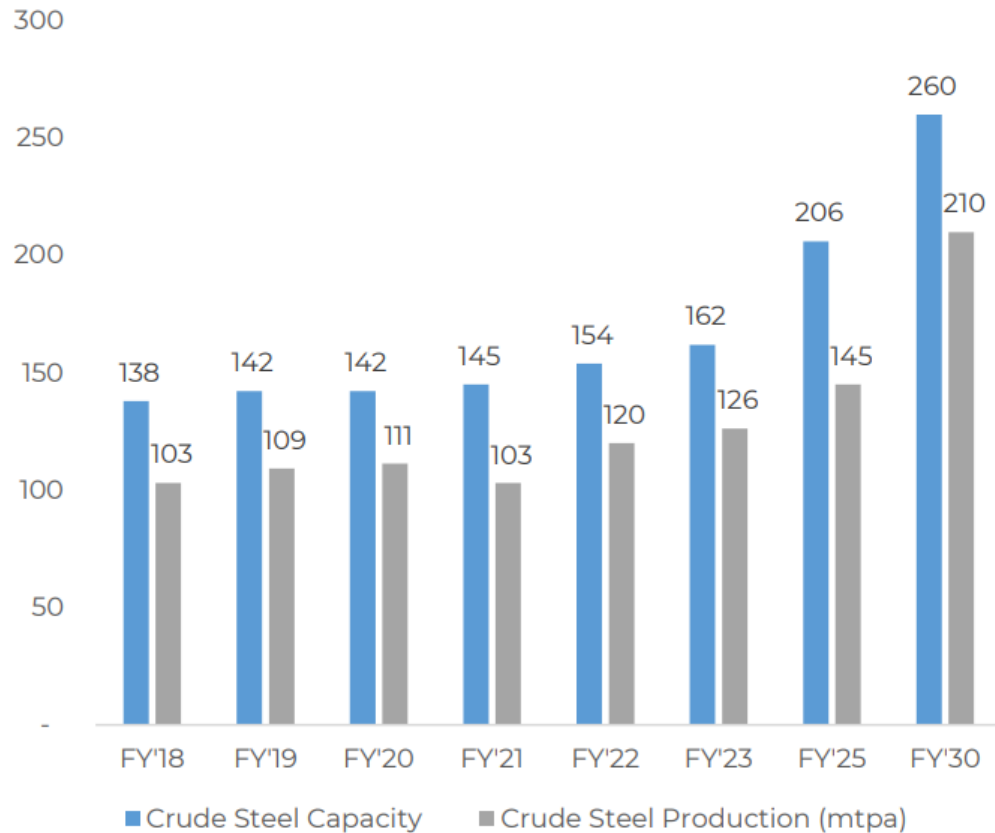
❖ **The New steel policy, 2017 aspires to achieve 300MT of steel making capacity by 2030.**

❖ **New Steel Policy seeks to increase per capita steel consumption to the level of 160 Kgs by 2030 from existing level of around 60 Kg.**

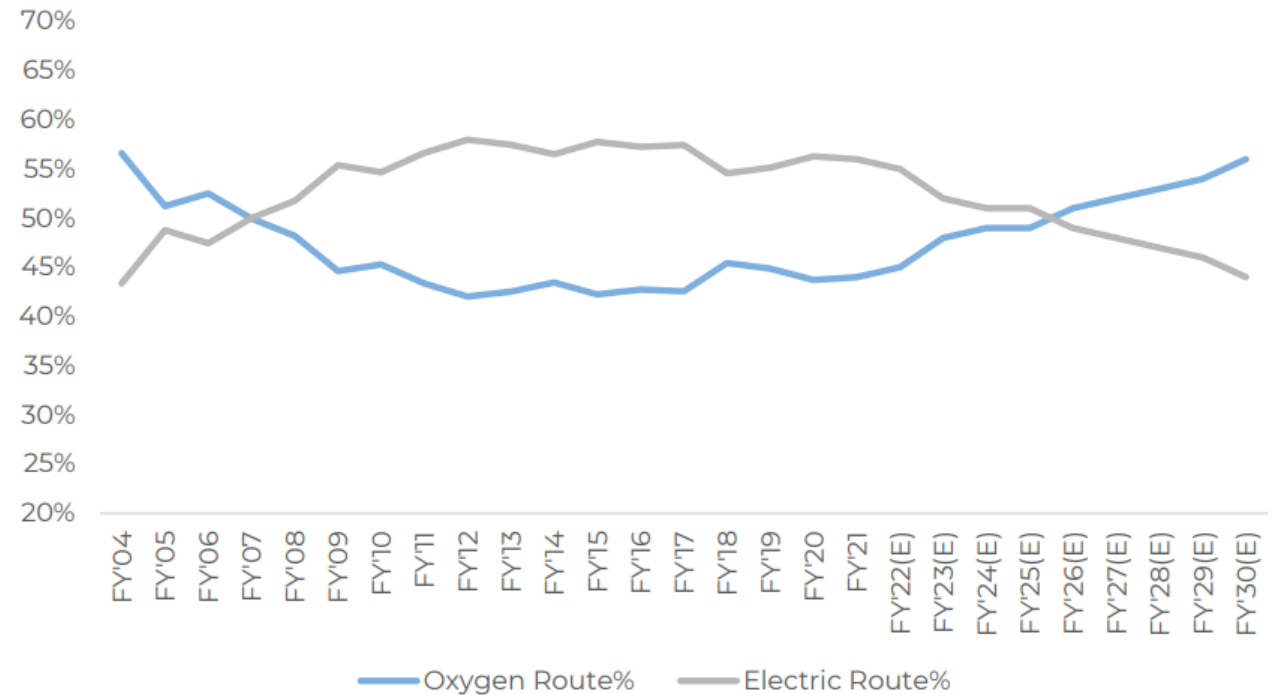


# India - Steel Scenario

## India Crude Steel Scenarion FY'30

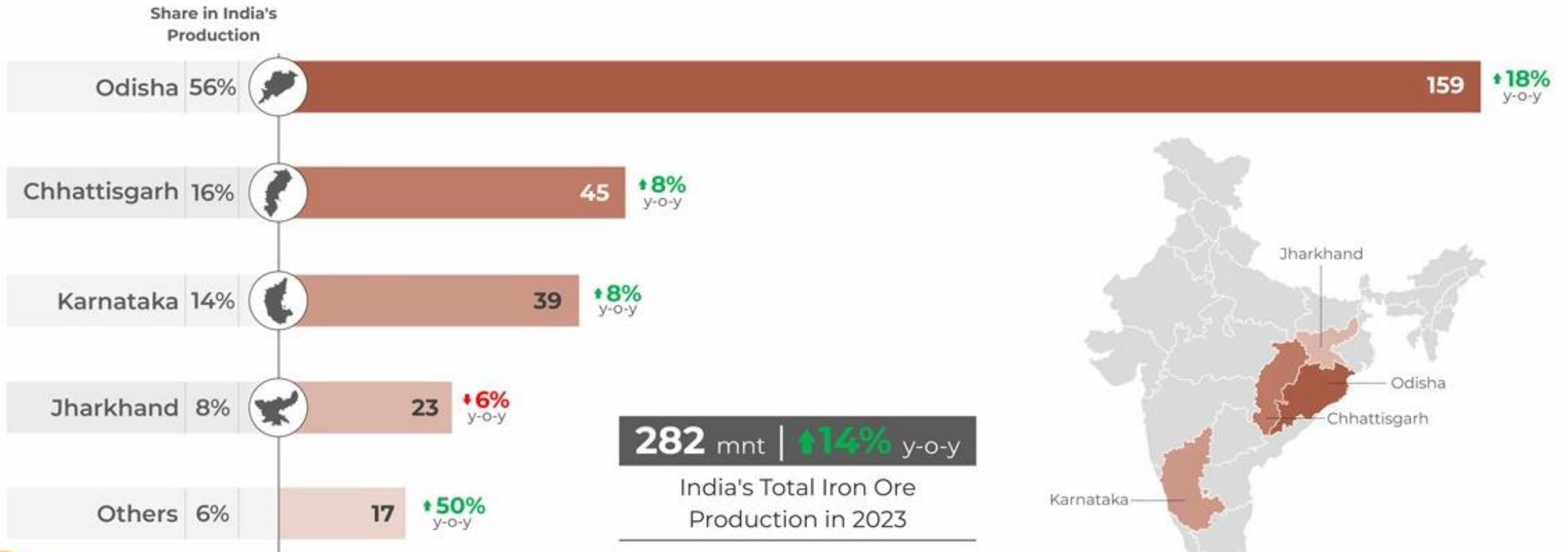


## India: Crude Steel Production Route Wise Upto FY'30



- Most of the capacity expansions are in the form of BF-BOF by 2030
- BF-BOF will contribute 55% of India's crude steel capacity against a current share of 45%

# India Iron Ore production 2023



# India - Iron Ore Production Trend



# India Steel Raw Materials demand

**FY 23**

**Crude steel  
126 MMT**

**Iron  
103 MMT**

**Scrap  
23 MMT**

**Sponge  
43 MMT**

**Hot Metal  
81 MMT**

**Scrap  
26 MMT**

**Lumps  
27 MMT**

**Lumps  
28 MMT**

**Sinter  
65 MMT**

**Pellet  
27 MMT**

**Pellet  
37 MMT**

**FY 25**

**Crude steel  
145 MMT**

**Iron  
118 MMT**

**Scrap  
27 MMT**

**Sponge  
48 MMT**

**Hot Metal  
94 MMT**

**Scrap  
29 MMT**

**Lumps  
30 MMT**

**Lumps  
30 MMT**

**Sinter  
65 MMT**

**Pellet  
45 MMT**

**Pellet  
55 MMT**

**FY 30**

**Crude steel  
210 MMT**

**Iron  
167 MMT**

**Scrap  
43 MMT**

**Sponge  
65 MMT**

**Hot Metal  
140 MMT**

**Scrap  
45 MMT**

**Lumps  
40 MMT**

**Lumps  
52 MMT**

**Sinter  
85 MMT**

**Pellet  
60 MMT**

**Pellet  
85 MMT**

# Karnataka – Working mines and Additions (Merchant Mines)

Merchant Mines			
SI No	Mining Lease	MPAP in MT	FY23-25 Addn
1	VESCO	1.10	
2	B Kumar goud	1.71	
3	SMIORE	1.60	2.90
4	ZTC RIOM	0.48	
5	VNK Menon	0.10	
6	Lakshmi Minerals	0.10	
7	Nadeem Minerals	0.41	
8	Allum Prashanth	0.25	
9	RBSSN	0.24	
10	Allum Prashanth	0.09	
11	M Hanumantha Rao	0.23	
12	RMML	0.63	0.27
13	H N Premkumar	0.12	
14	SKMEPL	2.38	0.62

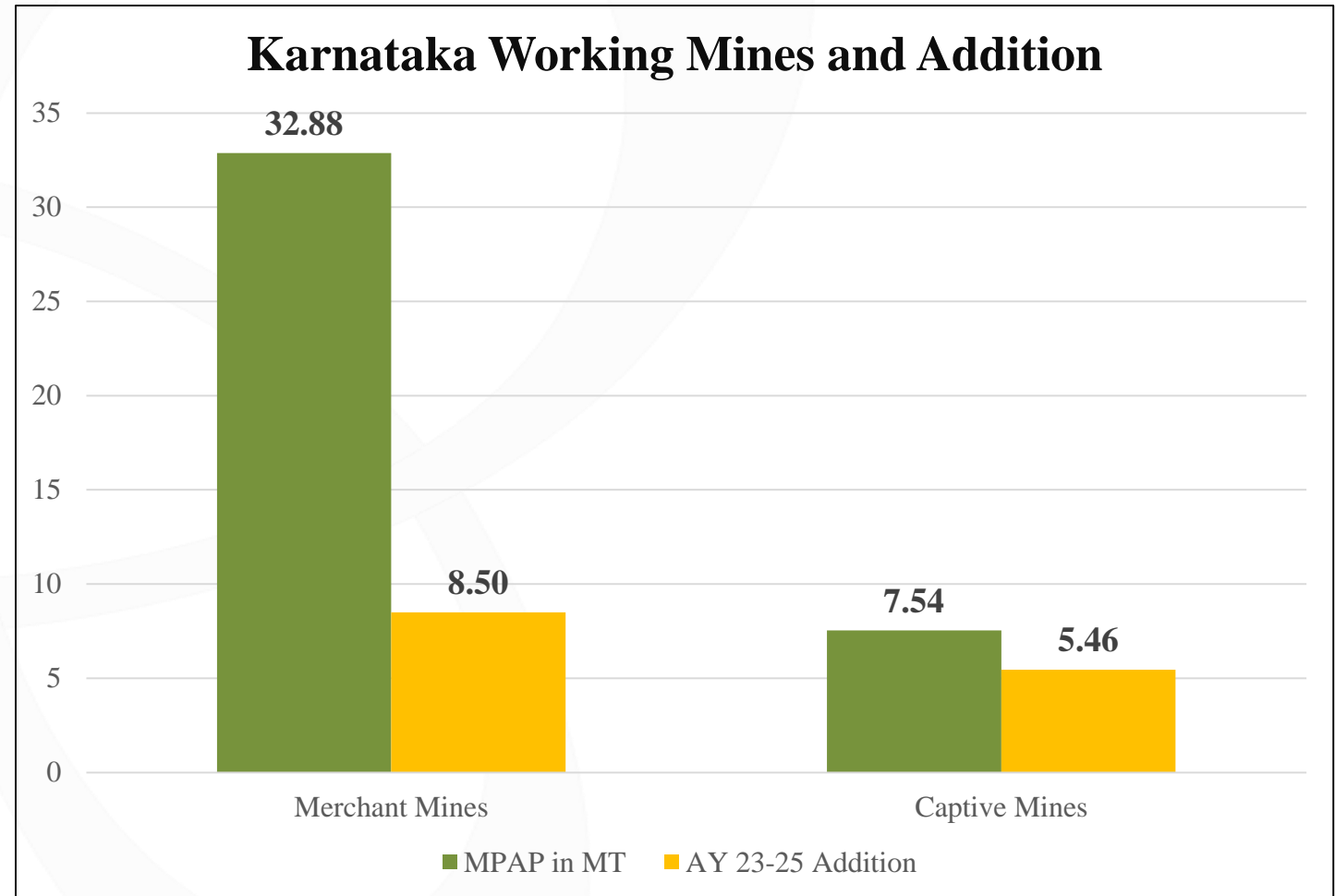
SI No	Mining Lease	MPAP in MT	FY23-25 Addn
15	NMDC-KIOM	7.00	3.00
16	NMDC-DIOM	7.00	
17	MML-TIOM	0.65	
18	MML- SIOM	1.34	
19	S A Thwab	0.07	
20	Lakshmi Minerals	0.09	
21	ZTC DIOM	0.08	
22	VESCO	0.46	
23	R Praveen Chandra	1.40	0.40
24	Sesa Goa	5.19	1.31
25	Garudadhri Impex P Ltd	0.03	
26	M/s karnataka Limpo	0.05	
27	Goa Sponge and Power	0.02	
28	V Sushelamma	0.06	
<b>Total</b>		<b>32.88</b>	<b>8.50</b>

# Karnataka – Working mines and Additions (Captive Mines)

<b>Captive Mines</b>			
<b>SI No</b>	<b>Mining Lease</b>	<b>MPAP in MT</b>	<b>FY23-25 Addn</b>
1	JSW (TML)	0.30	
2	JSW (Hothur Traders)	0.41	
3	JSW (V S Lad)	1.17	
4	JSW (TML)	1.44	
5	JSW (Rama Rao Paul)	0.94	
6	Hothur Ispat Pvt Ltd	0.31	
7	JSW - M/s MEL (BBH)	1.00	3.00
8	JSW - Narayanpur Mn & IO	1.11	
9	JSW - ZTC	0.18	
10	JSW - VIOM	0.00	0.90
11	Minera Steel (Auro Minerals)	0.18	
12	MSPL (KIOM)	0.50	0.24
13	MSPL (NIOM)	0.00	0.77
14	MSPL (RIOM)	0.00	0.23
15	MSPL (SIOM)	0.00	0.32
<b>Total</b>		<b>7.54</b>	<b>5.46</b>

# Karnataka – Working mines and Additions

Sl No	Mining Lease	MPAP in MT	FY23-25 Addn
1	Merchant Mines	32.88	8.50
2	Captive Mines	7.54	5.46
<b>Total</b>		<b>40.42</b>	<b>13.96</b>



# Karnataka – Current Demand and Additions

## Karnataka - Integrated Steel Plant Demand

SI No	Buyer	FY 24		FY 2025 Addition		
		Capacity	Iron Ore Demand	Capacity	Iron Ore Demand on Capacity	Expected Iron Ore Demand
1	JSW - T/BMM	12.5	25	7	12.5	5
2	JSW - Salem	1.3	2			
3	Vedanta Limited	0.8	1.28			
4	KFIL	0.54	0.86	0.2	0.32	0.2
5	SriKalahasti Pipes	0.3	0.48			
6	Arjas Steel	0.3	0.48			
7	Jindal Saw	0.43	0.69			
8	Hospet Steel	0.7	1.12			
9	SLR Metaliks	0.3	0.48			
10	Sathavahan Ispat	0.12	0.19			
<b>Total</b>		<b>17.3</b>	<b>32.6</b>	<b>7.2</b>	<b>12.8</b>	<b>5.2</b>

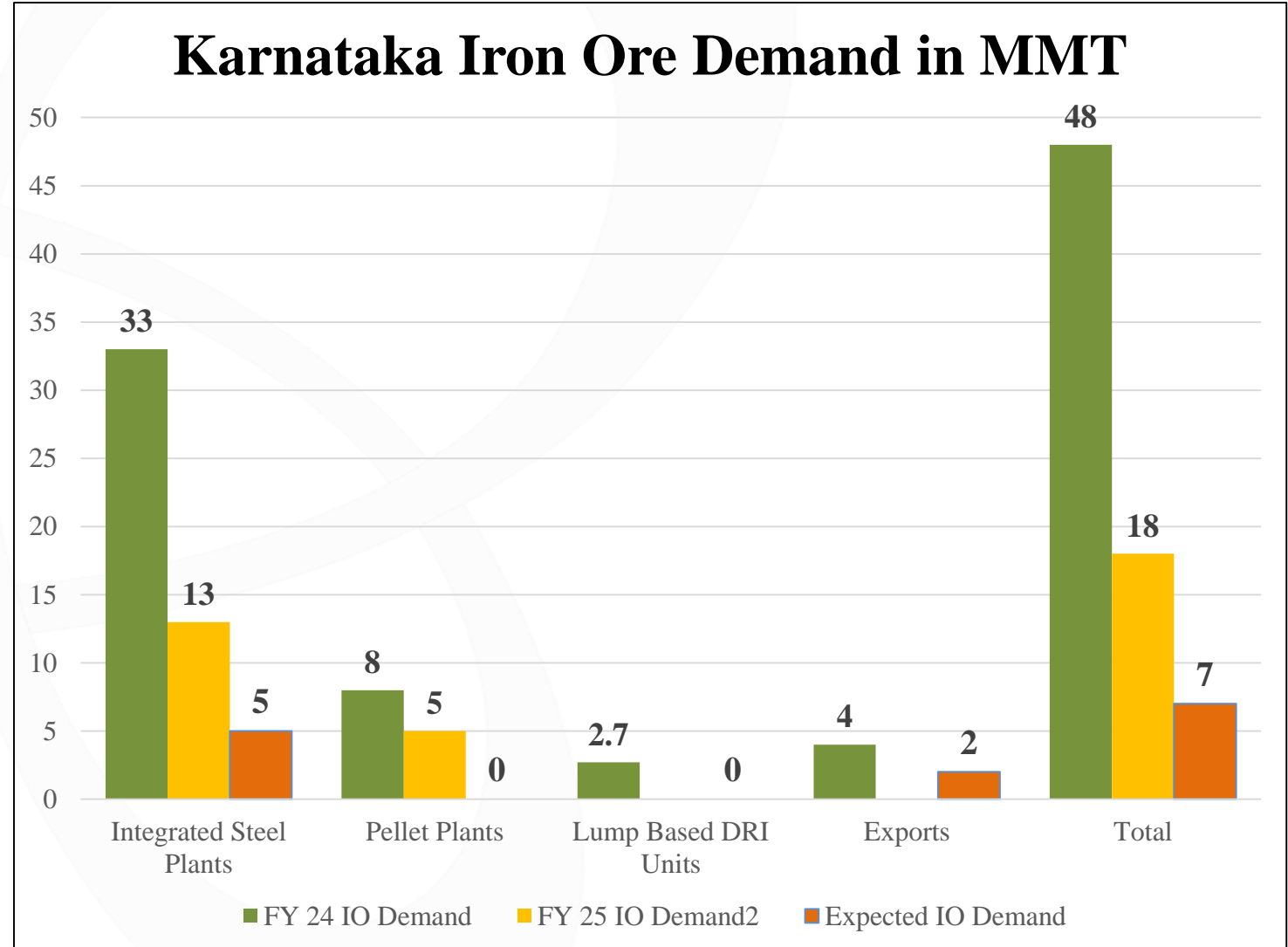
## Karnataka - Pellet Plants Demand

SI No	Buyer	FY 24		FY 2025 Addition		
		Capacity	Iron Ore Demand	Capacity	Iron Ore Demand on Capacity	Expected Iron Ore Demand
1	BMM	2.4	2.64			
2	Minera Steel	0.6	0.66			
3	MSPL Limited	1.2	1.32	2.8	5	1.5
4	Xindia Steels	0.8	0.88			
5	Janki Corp Limited	0.8	0.88			
6	NMDC Limited	1.2	1.32			
7	RPCL	0	0.69	3	5	1.5
<b>Total</b>		<b>7.0</b>	<b>8.4</b>	<b>5.8</b>	<b>10.0</b>	<b>3.0</b>
<b>Lump Based DRI Units</b>			<b>2.7</b>			
<b>Exports</b>			<b>4</b>			<b>2</b>



# Karnataka – Current Demand and Additions

Sl No	Description	FY 24 Iron Ore Demand	FY 25 Iron Ore Demand	Expected Iron Ore Demand
1	Integrated Steel Plants	33	13	5
2	Pellet Plants	8	5	
3	Lump Based DRI Units	2.7		
4	Exports	4		2
<b>Total</b>		<b>48</b>	<b>18</b>	<b>7</b>



# Karnataka Iron Ore demand/Supply

Particulars	Karnataka Demand Supply									
	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24E	FY25E	FY26E
Merchant Mines	28	30	29	30	30	33	30	32	41	41
Captive Mines	0	0	2	4	6	6	6	6	12	12
Import Other States	2	4	1	0	2	4	2	4	0	0
Import	0	2	5	0	0	0.4	0	0	0	0
<b>Total Supply</b>	<b>30</b>	<b>36</b>	<b>37</b>	<b>34</b>	<b>38</b>	<b>44</b>	<b>38</b>	<b>42</b>	<b>53</b>	<b>53</b>
Consumption	29	32	33	34	37	44	36	39	63	63
Exports	0	0	0	0	0	0	2	4	7	7
<b>Total Demand</b>	<b>29</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>37</b>	<b>44</b>	<b>38</b>	<b>43</b>	<b>70</b>	<b>70</b>
<b>Gap</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-1</b>	<b>-17</b>	<b>-17</b>

- Increase in supply of 8 MnT from merchant mines and 5 MnT from Captive mines expected because of enhancement and operationalization of non working mines
- Increase in demand of 12 MnT expected in FY25 and further 12 MnT in FY26 because of capacity additions
- FY26 may see iron ore short supply scenario because of increased demand.

## ❖ **Challenges :**

- ❖ Present Proved Reserves are not sustainable
- ❖ 20 yrs life considered for existing Mines –Difficult in getting of Ore on Long term

## ❖ Way Forward.....

- ❖ More focus on exploration and on identifying the reserves
- ❖ Auctioning of greenfield blocks. (Karnataka has the highest Iron ore OGP of 4000 Square KM amongst the other states in the country).

## ❖ **Challenges :**

- ❖ There is no other state in the country which has MPAP and is applicable only in Karnataka
- ❖ Current MPAP of 50 MnT is also highly underutilized with approved MPAP of 33.5 MnT for A & B Category mines. Also Proper apportionment of MPAP amongst sectors within Karnataka is also important

## ❖ **Way forward .....**

- ❖ Removal of CAP on production of Iron ore of State & districts
- ❖ Allow Miners to produce as per the statutory approvals

## **Depletion of High Grade Iron Ore**

The quality of available iron ore has been progressively diminishing. From avg grade of 63% Fe in way back 2007, grade has now reduced to below 55% Fe showcasing the need of low grade utilization. Low grade utilization requires beneficiation of ore which needs availability of

land for processing

water for processing

storage of tailings,

## **Tailings Accumulation**

Accumulation of tailings and non-utilization of low-grade ores poses a significant challenge and space constraints.

## Incentives on low-grade iron ore utilization

Govt should offer Incentives to encourage the Production and utilization of low-grade iron ore in order to meet the demand of Iron ore and conserve the depleting high grade Iron Ore. Utilization of Low grade Iron ore is the only option to reduce/minimize the wastage of Ore.

## Research & Development

R&D Investments should be increased to focus on the efficiency and sustainability. This includes supporting research initiatives focused on improving **beneficiation processes, waste management, utilization of low-grade and reduction of tailings.**

## Tailings utilization

The operational capacity of the beneficiation plant is currently hindered due to the unavailability of **space for a tailing storage**. Government intervention is necessary to facilitate the **allotment of land** for tailing storage.

This support is essential to enable the beneficiation plant to operate at its full potential. Most Beneficiation Plants are operating less than 75% of its installed capacities due to accumulation of generated Tails.

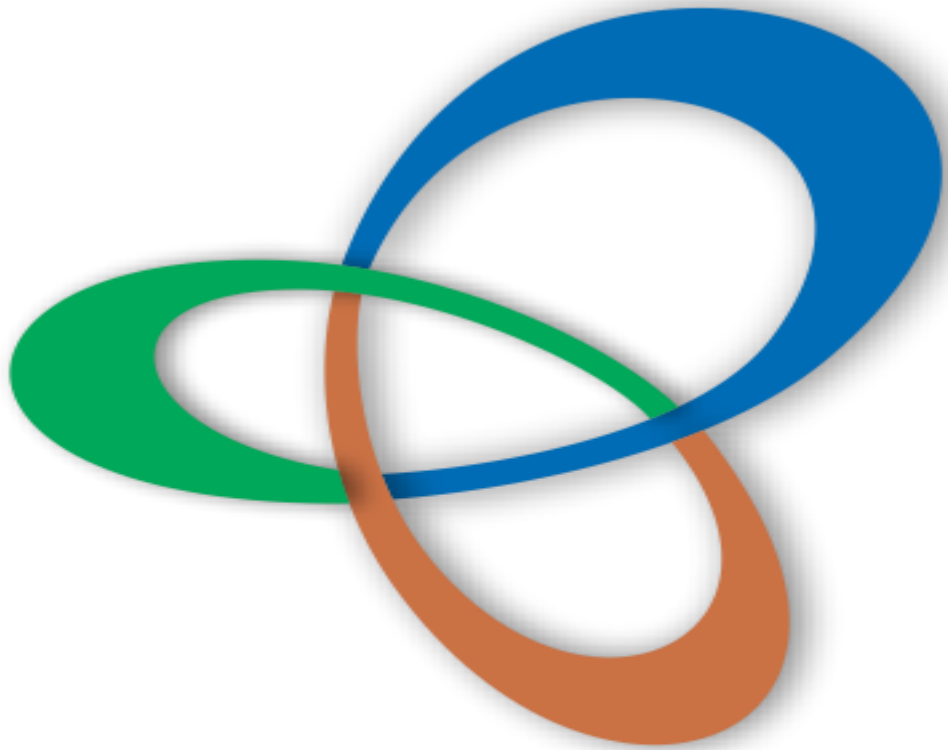
**Land allotment :**

**Water allotment :**

**Dry Beneficiation :**

**Use of Tailings : ..... Suggestions**





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***Thank you!***