

SPONGE IRON INDUSTRY : CURRENT SCENARIO

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OVERVIEW AND PROFILE OF THE INDUSTRY

The sponge iron has of late come up as a major input material for steel making through electric furnace route – both Electric Arc Furnace and Induction Furnace. Due to long gestation period, huge investments, dependence for coke on foreign suppliers, etc., the steel industry is slowly diverting itself from blast furnace route to electric furnace route and the requirement of Sponge Iron is increasing very fast. Another major reason is the global shortage of scrap.

The steel making furnaces in the eastern region use average 70% Sponge Iron in the feed material for steel making. The future for the Sponge Iron is therefore quite bright.

ROLE OF DRI IN ECONOMY

The steel is today considered as the backbone of India economy. The growth of economy has a direct relation with the demand of steel. With the present steel intensity index, considering the GDP projection by the Govt. of India, growth of steel demand will be around 11% annually.

PRODUCTION OF STEEL: (figures in MT)

	India	China
Year 1952	1.5	1.5
Year 2005-06	43	340

It is universally accepted that Indian economy is growing at a very high rate presently and the demand for steel is also showing an upward trend.

No. of units in operation - India 283

Now DRI units have spread over the states of Orissa, Jharkhand, Chattisgarh, West Bengal, Karnataka, Tamil Nadu, Andhra Pradesh, Gujrat and Goa.

India is the largest producer of Sponge Iron in the world –

In the year 2006 - India produced	- 13.9 million ton
Venezuela	- 6.2 million ton
Iran	- 4.3 million ton
Mexico	- 4.5 million ton

As per the National Steel Policy issued by the Ministry of Steel – India will produce 110 million tons of steel by 2020. The requirement of Sponge Iron as metallic will be 30 million tons.

Projection for metallic requirement:

Year	Route	Melting Scrap	DRI
2010-11	Electric Furnace Route	14 million	18 million

But availability of scrap is not likely to reach 11 million.

Today India produce 13.9 million tons of sponge iron, out of which 4.2 million ton is gas based and remaining 9.7 million ton is coal based.

India has a proven reserve of 410 million ton of high grade iron ore, another 440 million ton of high grade iron ore which will be established. India has total 9992 million ton of iron ore reserves (as per IBM report of 1995).

India has sufficient non-coking coal through of high ash low fixed carbon grade. Coal is used as a reductant for sponge iron making in the furnace.

The availability of scrap of required quantum is unlikely and therefore scraps needs to be replaced more and more by DRI.

Local supply of scrap is diminishing as generation of scrap in India due to improvement of technology is getting continuously minimized.

As per World Steel Dynamics (WSD) – the Global shortage of scrap will reach 68 million tons in the year 2010.

That means the scrap price will go up and availability will be a problem. Today the international price for scrap is around US\$ 390.00.

Due to soaring price of iron ore and coke, blast furnace is being set up in the countries where iron ore or coking coal is available.

With resources available in India – Sponge Iron – Electric Furnace Route is the most viable option for steel making.

As per MARRAKESH Round Table - the bond rate of import duty will go down further.

And foreign countries are likely to invade Indian market.

We must produce steel at a cheaper cost to remain competitive and control over domestic market.

DRI based steel making is therefore the only answer.

RAW MATERIAL CONSTRAINTS

IRON ORE: Iron ore of high grade is available in Orissa / Jharkhand and availability is not a problem. Only the high cost of iron ore is causing a dent in the economics of scale of sponge iron industry.

Iron ore is produced both by private sector and public sector. While organizations like NMDC, OMDC, OMC operate iron ore mines and supply to the industry, due to their policy of marketing



the prices offered are very high irrespective of cost of production. As per the study made by the Government of Orissa, the cost of production of 1 ton of iron ore is around Rs. 750/-. This includes cost of raising, dynamite, transportation to the crushing point, crushing to sizes and losses due to generation of fines.



But unfortunately the prices offered by the mine owners are around Rs. 3500/- per ton loaded into wagon. Such high prices of iron ore often create problems particularly when the selling prices of sponge iron falls.

It has been observed during the year 2006-07 the prices of sponge iron went down upto Rs. 8200/- per ton. Such tumbling of prices hits at the economic viability of the sponge iron sector.

Sponge iron industry has made several representations to the competent authorities for changes in policy which will help the sponge iron industry to procure iron ore at a regulated / reasonable price. This is possible either by providing mines to the sponge iron producers, may be through a consortium or by imposing levy on a part of the production for distribution to the sponge iron producers. The government is now working to develop a National Iron Ore policy which is likely to see the light of the day soon.

COAL: Equal sordid tale is the supply of coal which is totally government controlled. Many units are now enjoying the benefit of coal linkage system and those who are still out of the purview will be linked with coal linkage system very soon.



But the grade of the coal offered is not the grade required by the sponge iron industry. Sponge iron requires

specific characteristic of coal – IDT of coal ash should have 13000 degree C temperature, reactivity of coal – 2 cc of CO / gm of C/Sec., Fixed Carbon to the level of 42-44%. Other features like Volatile Matter between 26-32%, Ash 25%, Coking Index and Swelling index less than 1, etc. are required for maximization of good quality sponge iron production.

This is causing a concern for the sponge iron industry as well as environment. The sponge iron industry is forced to use coal with ash content over 40%, FC LESS THAN 33%.

POLLUTION & ENVIRONMENTAL CONTROL

The sponge iron industry is concerned about the problem of pollution and global warming. Units are trying their level best to control pollution but we consider that the government must step in to help the sponge iron units in their efforts. Approximately Rs. 600 crores has been contributed to the exchequer on account of excise duty. We have made representation to the government that atleast 10% of the contribution should be paid back to the respective state governments improving the environment situation.

Several funds from international level are available to

minimize pollution level for the iron and steel industry. For example - foundry industry in China or Re-rolling sector in India -

Huge fund have been made available through UNDP-GEF project fund. Efforts can generate fund from the sources for the improvement of the environment.

PROBLEM OF DOLOCHAR

The problem of dolochar generation which is exorbitantly high due to use of inferior quality of coal is a big problem of the industry.

However, sponge iron units of West Bengal in collaboration with RRL, Bhubaneshwar and National Project Committee, MOS, Govt. of India are working on the recycling of dolochar after beneficiation.

In fact lot of advancement has already been made and at the insistence of the Association Ministry of Steel has preliminarily agreed to support the project with part finance.

Many units are setting up power plant to use dolochar as fuel.

WATER SUPPLY

Many DRI plants are not supplied with adequate water which is essential for continuous running of pollution equipments. Government may ensure proper supply of water through PHE or other authority.

TRANSPORT PROBLEM

Local road transport has become a menace for the DRI Industry. Transporters are forming small association to force us to work at their terms and conditions. Interference of the government is highly solicited.

For the units located at a distance from the iron ore centre, dependence on rail transport is essential but it is almost impossible to obtain railway rake through normal process and that too at a reasonable time.

LAW & ORDER PROBLEM

Miscreants and anti-socials are often interrupting the movement of the input material particularly in the longer route.

Collectively they demand money for loading, unloading and movement of the material.

Information to District H.Q. has not created much impact.

The problem needs to be taken up by the Competent Authority immediately.

Being located at remote places, often local residents create law and order problem.

CONCLUSION

We believe, for the sake of country and growth of economy, growth of sponge iron industry is a must. This is possible only with the active support of the government.

Efforts to make this sector more eco-friendly will meet success only if competent authorities take up the developmental jobs in proper spirit.

