Indian Iron Ore : An Overview

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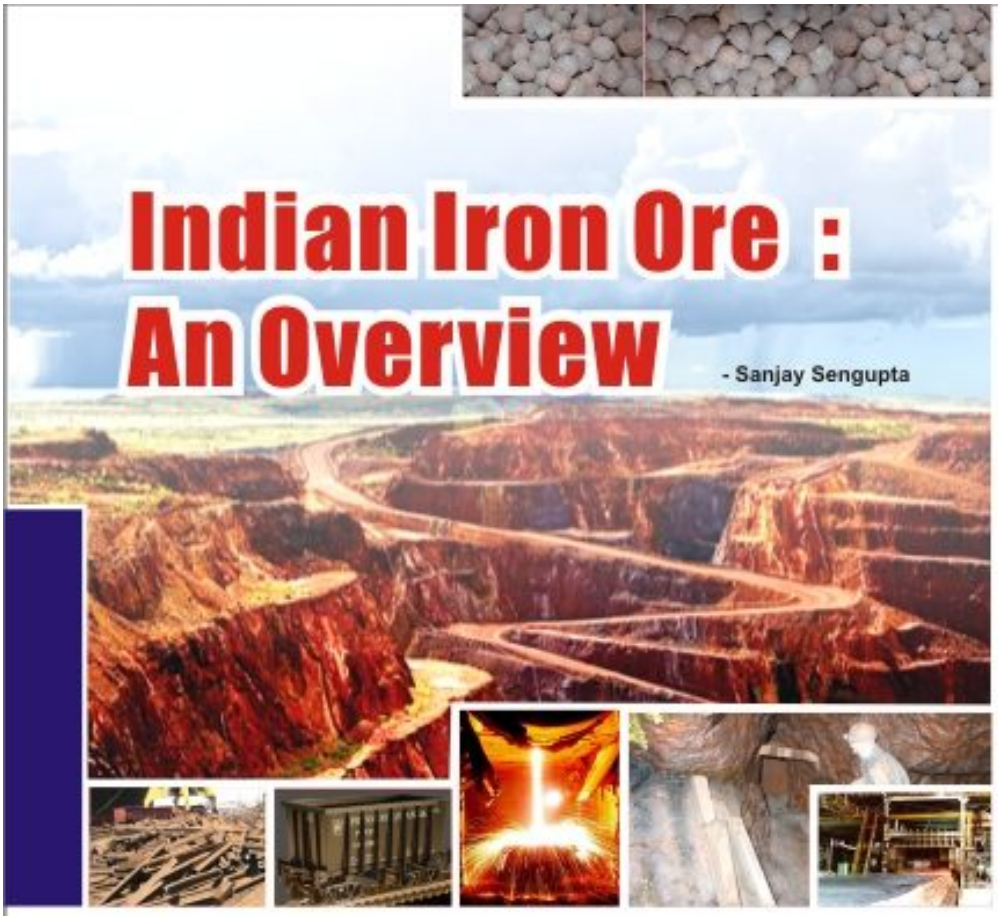

Steel, primarily being a raw material based industry, is impacted to a great degree by the various characteristics of the raw materials like quantity, physical properties, proximity and casts. These factors influence physical properties, proximity and casts. These factors influence the iron and steel industry is more than one way. The areas impacted are choice of technology, environment, product-mix, asset productivity and cost competitiveness. Iron ore is the basic raw material required for iron and steel making. Globally, about 65 percent of crude steel is produced through the BF-BOF route in which iron ore is the main input. Besides this route, many new technologies have been developed over the years which uses iron ore pellets, DRI, iron ore fines and concentrates in EAFs, Ifs and S. R. Prneases.

Iron Ore Reserves in India

India's Iron Ore Reserves as per 1 BM Year Book, 2005 Areas follows 01.04.2005

Hematite Ore	(In Million Tonnes)		
Grade	Reserves	Remaining Resources	Total
High Grade (Fe+65%)	1304.30	629.03	1933.33
Medium Grade (Fe 62-65%)	3544.03	3062.02	6606.05
Low Grade (Fe below 62%)	1989.75	1686.94	3676.69
Unclassified	159.23	743.67	902.90
Black Iron Ore	2.52	12.72	15.24
Others	1.62	5.05	6.67
Unclassified	1.98	0	1.98
Not Known	0.73	1486.79	1487.52
Grand Total	*** 7004.17**	**7626.22**	**14630.39**

* The grand total does not tally due to norming off.

In addition to the above, India had a total reserve and resources of Megnetite ore to the tune of 10,619 million tones as on 01.04.2005, taxing India's total reserves plus resources to 25,249 Mt on the same date.

N.B.I. these resources do not include about 1000 Mt of hematite ore discovered by DMG, Chattisgarh in the Kabirdham district.

The table does not give a complete picture of India's iron ore reserves.

It may be observed from the above table that high grade Hematite ore with an Fe-content of over 65 percent constitutes only 13.21 percent of grand total, Medium grade ore (Fe 62 – 65 percent) has the highest share of 45.15 percent and low grade ore has a share of 25.13 percent in total Hematite Ore.

Distribution of Iron Ore Reserves in India

India's Iron Ore Reserves Occurs in Five Major Zones as Shown below :

Zone Status : Major & Deposits	Ore Type	Fe-Range (%)	Alumina (%)	Phos. Max (%)
Orissa, Jharkhand : Chiria, Noamundi, Meghahatuburu, Barsua, Malangto, Gandhamardan, Daitari	Hematite	62 – 64	2 – 4	0.04 – 0.10
Chattisgarh, M.P, Maharashtra : Biladila, Dalli, Rajhora, Rawghat, Mahamaya, Aridongiri, Surajgarh	Hematite	64 – 66	1.0 – 4.0	0.04 – 0.15
Karnatka :Donimalai, Ramandurg, Kumarswamy, NEB Range, Ettinahatti, Tumli, Belagal	Hematite	62 – 64	2.0 – 4.0	0.04 – 0.09
Goa : North Goa, South Goa, Redi	Hematite	60 – 63	2.0 – 4.0	0.04 – 0.07
Karnataka : Kudremukh, Babadudan, Kudachari	Magnetite	35 – 45	1.0	NA

As has been discussed earlier, major portion of India's iron ore reserves is of medium grade with an average Fe-content of 62-65 percent. Over the years mines have gone deeper and deeper with the result that mines with high grade iron ore which was available earlier in the mines at the Bailadia group as well as in Barbil sector etc. are now less in number. The Fe-content of the Indian iron ore is scattered in the lump. Major portion of the iron ore needs beneficiation for use in steel making. In this process, about 15 percent of the ore gets reduced.

Quality of Indian Iron Ore

The quantity of iron ore presently available in India contains less Fe and ore mixed with mare gangue materials. The ores have relatively high alumina and low Fe-content which causes adverse slag chemistry and ores are less closely sized containing large amount of undesirable fines than in other countries. The Indian iron ore is also characterized by high alumina and silica ration. The alumina content in the Indian iron ore lies between 2-4 percent in lumps and 46 percent in fines. Sintex produced from such fines contains a much bigger percentage of alumina compared to other major iron ore producing countries where it seldom exceeds 2-2.5 percent of alumina.

It has been found that one percent increase in alumina content of the iron ore leads to 2.25 percent increase in coke rate, a drop of 4 percent in BF productivity and an increase in flux consumption by 30 Kg per tonne of hot metal produced.

Measures for Improvement of Iron Ore Quality

In a paper presented by M.P. Srivastava, S. K. Pan and M. Jain of RDCIS, SAIL at the ISS-2005, held in Kolkata, based on reports of various research organizations have outlined the following measures for improvement of the quality of iron ore :

I) An increase in Fe-content in the iron ore burden by one percent will increase the productivity of hot metal by 1.5 to 2 percent and decrease the coke rate by 0.8 to 1.2 percent. This will amount to a cost reduction of hot metal by Rs. 60- 70 per tonne of hot metal.

ii) Lowering of alumina content by ore percent will reduce the cost of hot metal by Rs. 200 – 250 per tonne.

iii) Lowering of Silica content by one percent in iron ore burden will reduce the cost of hot metal by Rs. 50 – 100 per tonne.

iv) Reduction in undersize lump ore by one percent will reduce the cost of hot metal of Rs. 50 – 60 tonne.

v) Reduction in fluctuations in Fe-chemistry by one percent will reduce the cost of hot metal by Rs. 40 – 50 per tonne.

vi) Even if a reduction of 0.5 percent in alumina content in the iron ore burden and a reduction of 5 percent in undersize and improvement in physical and chemical consistency is achieved, it is expected that a saving of Rs. 150 crore or more may be possible for a 4 – Mtpy hot metal production plant.

The above cost benefits are likely to be substantially higher at present.

Production and Export of Iron Ore by India

The production and export figures by India between 1992-93 and 2006-07 are presented in Table – 1.

Table – 1 : Production & Export of Iron Ore by India between 1992-93 and 2006-07

Year	Production	Y-o-Y Growth	Export	Export as % of Production
1992-93	57.5	–	26.8	46.61
1993-94	59.6	3.65	29.9	50.17
1994-95	64.5	8.22	28.3	43.88
1995-96	67.4	4.50	28.1	41.69
1996-97	68.2	1.19	29.5	43.26
1997-98	73.2	7.33	31.0	42.35
1998-99	77.0	5.19	32.4	42.08
1999-2000	74.9	(-) 2.73	32.9	42.93
2000-01	80.8	7.88	37.5	46.44
2001-02	86.2	6.68	41.6	48.26
2002-03	99.1	14.97	48.5	48.94
2003-04	120.6	21.70	62.7	51.99
2004-05	142.7	18.33	78.1	54.73
2005-06	155.2	8.76	89.3	57.54
2006-07	176.0	13.40	93.0	52.84

Data Source : Upto 2005-06 – JPC & IBM, Nagpur, 2006-07 - NMDC

It is evident from the above table that the average yearly growth of iron ore in India was 40.84 percent. India was exporting about 40 to 50 percent of its production upto 2002-03 but the rate increased to about 52 percent and above from 2003-04 to the year 2006-07, mainly due to higher exports to China whose production of crude steel went up by 26.1 percent in 2004, by 26.8 percent in 2005 and by 18.8 percent in 2006. India is diverting most of its export of iron ore in recent years to China.

Gradewise Production of Iron Ore in India

Gradewise production of iron ore between 2002-03 and 2004-05 are shown in Table – 2.

Table – 2 : Gradewise Production of Iron Ore in India between 2002-03 to 2004-05

Grade	2002-03	2003-04	2004-05
Lumps	39,581	49,420	57,590
	(39.95)	(39.32)	(40.35)
Fines	52,994	67,052	79,976
	(53.49)	(55.60)	(56.04)
Concentrates	6,497	6,129	5,145
	(6.56)	(5.08)	(3.61)
Total	99,072	120,601	142,711
	(100.00)	(100.00)	(100.00)

Data Source : IBM, Nagpur

N.B. Figures in parenthesis ( ) indicates contributions of Lumps, Fines and Concentrates in total production.

It is observed that production of lumps iron increased at an average annual rate of 22.75 percent between 2002-03 and 2004-05. The similar increase in case of iron ore fines has been 75.46 percent and for concentrates there has been a decline in average yearly production of 39.60 percent.

Economical & Ecological Benefits of Optimised Mining & Beneficiation Systems

Dr. Ing. Herbert Breller, M.D., Allmineral GmbH & Co, A.G. of Germany, after studying the Indian Iron Ore Mining Scenario has made some valuable observations on economical and ecological benefits of optimum mining systems.

He has observe that iron ore mining in India has been characterized in the past by methods developed for high grade deposits and relatively small outputs of upto 2 Mtpy i.e. selective mining of high grade materials and simultaneous dumping of low grade and fines.

The scenario is changing dramatically and demands new approaches.

- Ratio of high grade / low grade ore in the deposits is coming down from 80/20 to 50/50 percent.
- The specific value of Fe percent in saleable product has increased over the last years by more than 100 percent.
- Fines, disregared as waste in the past, are becoming valuable product considering the upcoming sintering and pelletisation capacities in the country.
- Modern beneficiation process allow for effective and low cost upgradation of lumps, fines and ultrafines.

He has further observed that the economical and ecological benefits of combined sustainable approaches are obvious like :

- Production per volume of deposits increases and the lifetime of the reserves is prolonged.
- Volume of waste disposal requirement deposit become more profitable.
- At rising prices profit increase is disproportionate.

Use of Higher Capacity Equipment

In India, iron ore production is achieved through a combination of large mechanized mines, semi-mechanised mines and small mines. Upto the mid-mineties of the last century, the Indian iron ore producers were using dumpers of 25 – 30 tonnes capacity with excavations between 1.9 – 5.5 cum capacity and single pass drills with diameters from 150 – 300 mm.

But at present most of the Indian iron ore producers are using 50 to 60 tonnes capacity dumpers, excavations of 6 to 8 cum and single pass drill with diameters ranging from 250 to 400 mm. Crushing equipment of 5000 – 6000 tph capacity is now being installed in bigger mines.

Illegal Mining

The widespread illegal mining of iron ore in the Bellary district of Karnataka was reported about two years ago. The report said that a virtual parallel administration, complete with elaborate machinery to counterfeit permits and authorization has come up to support the illegal mining. This has deprived the Karnataka Government of Rs. 3000 crore of revenue in 2004-05 and 2005-06 as per Government estimates.

Experts feel that the long term damage can still be contained in Karnataka because the illegal mining is not more than six years old. Unless, the government acts quickly and take remedial measures in right earnest, Karnataka will suffer in the long run.

Industry experts opine that such illegal mining of iron ore may also be occurring in the states of Jharkhand and Orissa, though on a smaller scale.

Foreign Companies in Iron Ore Mining

The Government of India is considering a proposal to allow foreign mining companies to pick up stakes in captive mining in steel, power and cement sectors.

Presently, upto 1000 percent FDI is allowed for investment in iron ore and coal mines. The existing rules are likely to be changed to allow foreign majors and even the foreign financial institutions (FIIs) to pick up stakes in captive projects. In recent times, SAIL and POSCO faced problems to bring foreign partners due to lack of clarity in the existing rules. The amended rule may help such producers in future.

India's Requirement of Iron Ore upto 2019-20

Experts from MECON based in Ranchi, Jharkhand, has made a detailed study on the growth potential of the Indian steel industry up to 2019-20. According to this study, the production of crude steel, finished steel and the requirement of iron ore would e as follows :

Particulars	2011-12	2016-17	2019-20
I. Crude Steel Production Thru'			
a) Bfs / COREX – BOFs	47,669	79,763	106,942
b) EAFs / IFs	29,217	43,851	57,584
Total (All – India)	**76,886**	**123,614**	**154,526**
II. Production of Finished Steel from Crude Steel	73,041	117,347	156,300
III. Iron Ore Requirement for Steel & Pig Iron	109,065	179,896	239,986
a) BF Grade	38,687	60,368	81,090
b) D. R. Grade			

According to the study, 3.21 Mt of iron ore (at mines) is required to achieve the targeted finished steel production of 156 Mt in 2019 – 20 of this, requirement of B.F. grade iron ore about 240 Mt and that of D R Grade is 81 Mt.

At present, India has adequate, resources but the quality of the iron ore now available contains less Fe and is mixed with gangue materials. The quality of the Indian iron ore and the related problems has been discussed earlier.

Major portion of the Indian iron ore needs beneficiation for making it suitable for iron and steelmaking. In the process, 15 percent of the ore gets reduced.

It is clear, the MECON study observes, that by 2019-20, the demand of iron ore with be very high resulting in substantial decline in India's iron ore reserves as the need fro steelmaking would group considerably in the next 30/35 years if the economy grows as per expectations. In such a situation, India may an IMPORTER of iron ore by 2055 or so.

Pelletisation – Way to Utilize Iron Ore Fines

Indian iron ore production consists of 55 percent of micro fines and about 87/88 percent of India's export of iron ore is in microfines category.

Pelletisation is a process to convert iron ore fines into uniformed sized iron ore pellets which can be charged into blast furnaces of 63-68 percent can contribute to faster reduction and high metallization rate. Pellets with their high mechanicals and abrasive strengths can increase the production of sponge iron by 25-30 percent with the same amount of fuel.

About a decader back, pelletisation was not popular with the iron ore producers in India due to high investment cost of pellet plants. They were exporting iron ore fines generated at throw away prices. India's total production capacity for pellets in 2002-03 was only 13 Mtpy.

In an "International Seminar on Iron Ore Beneficiation and Pelletisation" held on 1st October, 2007 in New Delhi organized the Ministry of Steel in association with the Joint Plant Committee, experts from various organizations stressed the need to change the mindset of the iron ore producers to utilize the iron ore fines by producing pellets.

The experts of RDCIS, SAIL, opined that considering the position of iron ore reserves in the country and the targeted massive increase in steel production by 2019-20, thrust must be given on utilization of low grade iron ore in the range of the content of 50-58 percent as well as huge quantities of lump / slime, after beneficiation, which shall not only improve the reserve position by about 10-15 percent, but also provide micro-fines for pellet making for use in blast furnaces. They also pointed out the need for technological upgradation in iron ore processing circuit by introducing newer technology of iron ore beneficiation through R&D back up.

Paper presented in the seminar by the experts of MECON Ltd. said that in view of the changing iron ore scenario in the country, the Indian iron producers must shift focus from sinter intensive blast furnaces to pellet oriented (15 to 20 percent) operation. They also pointed out that due to the sharp rise in Calibrated Lump Ore (CLO) price, it is imperative to switch over to pellets in some of the coal based DR installations.

The seminar cocluded that pelletisation technology will have a predominant role in supplying technology of varying capacity should be encouraged to meet specific needs with respect to availability and type of iron ore fines / concentrates in the country. The role of the Government was also stressed for providing encouragement by way of policy support, incentives, so as to facilitate entrepreneurial initiatives towards upgradation of the low grade iron ores including slimes in tailing ponds by benefication and subsequent utilization of concentrate for sintering (pellet making). The present level of crude steel production in India is about 53 Mt. Target set for crude steel production in India has been revised upwards to 80 Mt in 2011-12 from 60 Mt environed in the National Steel Policy in November, 2005.

Experts opine that the crude steel requirement of 80 Mt. by 2011-12, shall be met by BF-BOF route – 65 percent and DR-EAF route – 35 percent. Assuming that 20 percent pellet charge materialized nationwide in the BF burden by 2011-12, the pellet requirement for the production of 65 percent through BF-BOF route, would amount to 18 Mt for production of 52 Mt through this route.

For production of the balance 28 Mt crude steel through DR-EAF route, the pellet requirement, as worked out by the experts, would be about 15 Mt which includes 2 Mt of excess DRI. The gas based units are using up to 70 percent of iron bearing feed materials.

For coal based DRI plants, it is assumed that on an average 10 per units may practice use of pellets by 2011-12.

The total installed capacity of pellet plants in India at present about 18 Mt. The pellet plants now under commissioning / engineering as per the experts of MECON Ltd. have a total capacity of 23.5 Mt.

The list of pellet plants are prepared by experts of MECON Ltd. (vide JPC Bulletin – October 2007) for pellet plants under commissioning engineering totaling a capacity of 23.5 Mt, however, does not include the following :

i) Ispat Industries Ltd. is setting up 1 Mtpy capacity pellet plant in the vicinity of Bailadila ore mines in Chattisgarh which may be operational by 2008.

ii) SAIL has set a target to meet about 15 percent of its total requirement of iron ore through pellets by 2011-12. SAIL intents set up 3 or 4 pellet plants acroos its iron ore mines in Jharkhand, Orissa and Chattisgarh. SAIL has decided to initially set up 2 Mtpy capacity pellet plant in Orissa.

If all the pellet plants under planning / commissioning come up, India's pellet making capacity will be able to meet the domestic demand in 2011-12.

Pellets Essential for Bigger Blast Furnaces

Some big producers are building state of the art large size blast furnace of 4000 m^3 capacity. However, the use of Sinter beyond 75-80 percent is not technically advisable in such big furnaces because of weaker properties resulting in the disintegration of Sinter.

Globally, fired pellets possessing superior crushing strength is being used as BF feed stock in USA, Canada and some European countries on a regular basis.

In India, both the COREX units and the Blast Furnaces at the Jindal South West Ltd.'s plant at Vijaynagar in Karnataka are charging 50 percent pellets in their BFs and the COREX units are successfully operating with the use of 80-90 percent pellets in the burden.

Expansion Programmes of NMDC and SAIL

National Mineral Development Corporation (NMDC) and Steel Authority of India Ltd. (SAIL) are the two major producers of iron ore in India. In 2006-07, these two producers together produced about 51.2 Mt of iron ore which was over 29 percent of the country's total protection of iron ore. The expansion programmes of these two producers are outlined below :

A. NMDC Ltd.

NMDC would be investing about Rs. 18,000 crore up to 2011-12 for expand its production capacity to 50 Mt and for conducting fresh exploitations. The increase in capacity will be achieved in the following manner :

i) **Kumarswamy Blocks B & C :** The mine will be initially developed for 3 Mtpy capacity and in conjunction with the existing Donimalai mines would be augmenting the production capacity to 7 Mtpy of ROM. As an when Donimalai is exhausted 7 Mtpy of iron ore would be continuously produced from Kumarswamy Blocks B & C.

ii) **Bailadila Deposit 11 B :** The lease of this deposit is now with NMDC. Its capacity would be expanded to 6 Mtpy by 2011-12.

iii) **Bailadila Deposit No. 13 :** As and when Bailadila-14 Deposit is exhausted, this deposit will be developed. NMDC and the Chattisgarh Government have decided to develop this deposit as a joint venture project with the Chattisgarh Mineral Development Corporation Ltd. This deposit will be developed with capacity of 10 Mtpy by 2011-12.

iv) **NMDC** is also chalking out plans to acquire mines both within and outside the country. NMDC is aiming to be global player for which it will have to expand in a massive way to cater to the needs of the leading steel producers of the country.

B. SAIL

In order to meet the requirements of iron ore for the planned capacity of 40 Mtpy by 2019-20. SAIL has undertaken the following projects in its various captive mines :

i) **Kiriburu :** The mine is the principal supplier of iron ore to SAIL's Bokaro Steel Plant has a capacity of 5 Mtpy of ROM and 4.25 Mtpy of finished product. Mining is presenting being done at the North Block of the deposit which has a balance reserve of 44 Mt and will last 9/10 years. SAIL has planned to shift the mining operation to the virgin South Block, having a probable reserve of 62 Mt to produce 4 Mtpy of iron ore annually.

ii) **Meghahatuburu :** The mine has a capacity of 5 Mtpy of ROM and 4.30 Mtpy of finished product. At present, mining is being done on a balance of 26 Mt and will last for 5-6 years. SAIL has planned to shift the mining operation to the virgin Central Block having a probable reserve of 79 Mt, which will help to produce 4 Mtpy of iron ore annually.

iii) **Bolani :** Bolani is the principal supplier of iron ore to SAIL's Durgapur Steel Plant. The present capacity of the mine is 3.44 Mtpy of ROM and 3 Mtpy of finished product. The mine has a reserve if 154 Mt. To meet the future requirements of the Durgapur Steel Plant, its capacity is being expanded to a level of 5 Mtpy of iron ore.

iv) **Barsila – Kalta – Taldih :** Known as 'Taldih Block', these mines have a reserve of 238 Mt. For developing the deposit into a mechanized mine of 4.25 ROM capacity, SAIL has signeda MOU with KIOCL for setting up a joint venture company. A pellet plant a 2 Mtpy capacity will also be installed.

v) **Chiria Mines :** These mines have an estimated reserve of about 2 million tones of iron ore with an Fe-content of 61-63 percent. The mines are also strategically located to cater to the iron ore requirement of SAIL plants in th eastern sector.

After modernization, the Chiria mines will start producing 7 Mtpy of iron ore by 2011-12. Work has already been undertaken for preparation of the Environment Impact of Assessment / Environment Management Plant for the development of the mines. The capacity may be expanded to 15 Mtpy depending on the requirement of SAIL's eastern sector plants.

vi) **Gua Mine :** Gua is presently having a reserve of 158 Mt and its iron ore production capacity of 2.4 Mtpy. Gua is primarily linked to IISCO steel plant. Capacity may be expanded to 5 Mtpy.

vii) **Rowghat Mines :** With the phasing out of Dalli-Rajhara mines in the next 6 years SAIL is planning to develop a new mine at Rowghat to produce 11 Mtpy of iron ore to meet the requirements of Bhilai Steel Plant. A rail linkage is being undertaken between Rajhara and Jagdalpur via Rowghat by the State Government, SAIL and NMDC.

viii) **Thakurani Mines :** An area of 278 hectares in Thakurani Pahar Block, having an estimated reserve of 75 Mt has been allotted to SAIL. SAIL has entered into a MoU with BHP Billiton of Australia for developing the Thakurani deposits. The size of the project will be decided after completion of prospecting activities.

Export of Iron Ore

A nationwide debate is going on regarding the issue of export of iron ore.

The Pariamentary Standing Committee on coal and steel submitted their report to Lok Sabha in December, 2005. The recommendations were :

- Export of iron ore should be stopped altogether. Steel capacity

to profitably utilize this surplus should be built in the country itself.

- This is possible as demand for iron ore would go on increasing manifold in the next few decades particularly in view of new steel plants beings set up and capacity of the existing plants expanded. This should be encouraged.

However, Government of India, in their Wisdom, constituted a fresh committee – the Anwar Hoda Committee (AHC). This committee did not include the representatives of the Indian steel industry.

- The draft report of the AHC did not fully recognized the scarcity of iron ore resources in India and recommended :
- Abundant iron ore resources are available in the country. Therefore, the National Mineral Policy should encourage the export of iron ore to global markets.
- All current restrictions, qualitative and quantitative on exports, whether fiens or lumps should be removed.
- AHC does not recognize the importance of value Addition inside the country. Therefore, they do favour the leasing of iron ore mines for captive purchase.

Mr. R. K. Sharma, Secretary General, FIMI, has made the following major observations in his many articles :

- The use of more lumps rather than fines by the integrated steel plant is because of abundant areas available with them and their selective mining. This is part of the reasons of large stockpile of fines lying at their pitheads.
- No captive mines should be granted to any steel plant because it breeds inefficiency and amounts to inter sectoral subsidy resulting either inefficiency in steel plants or absorption of extra profits by them.
- Since all iron ore can be used for steel making, steel makers should buy iron ore from the open market.

However, the National Steel Policy has formulated that the present policy of captive mining leases for the private sectors would continue subject to certain conditions. Also major steel producers like SAIL and Tata Steel, who have their captive mines will naturally not agree to purchase iron ore from the open market. They are introducing latest technologies to develop their captive mines and taking steps to use the iron ore fines for sintering / pelletisation.

A National Convention on Iron Ore was held in Kolkata February, 2008 organised by all leading central trade unions in which representatives from Tata Steel, JSW Steel, Jindal Steel management also attended and presented papers. The convention called for a total ban on iron ore exports. The convention maintained that :

- Integrated steel producers are using fines extensively to make sinter / pellet for charging into BFs instead of directly charging lump ore. By 2011-12, they will be using double the quantity of fine use.
- Government exchequer is being deprived of thousand of crore rupees that it can earn through various taxes / duties if steel is produced in the country rather than encouraging steelmaking in other countries using Indian Ore and import steel from the same countries.
- The Government of India an some State Government are very liberal to stand alone miners and not to the steel producers.
- Enough sintering / pelletisation capacities will come up in the steel sector by 2011-12 to utilize the iron ore fines.
- All domestic steel producers with more than 2 Mtpy capacity should be granted captive mining lease without any right to export iron ore for a healthy and secured growth of Indian steel industry.
- Renewal of leases for mining iron ore to the steel producers which has held up for years, should be cleared at the earliest.

It is expected that the Government while finalizing the new Mineral Policy would make a balanced and mature judgement to help the massive growth of the Indian Steel industry up to 2019-20. Higher rate of iron ore consumption and a high rate of export will deplete the reserves substantially and would make India an importer of iron ore in the next 40 years or so.

Price

The global price of iron ore may rise substantially in the near future. It is learnt that big steel producers like JFE Holdings Inc., Nippon Steel and POSCO of Korea have agreed to pay a 6.5 percent rise in prices to CVRD of Brazil for iron ore supplies in 2008-09. Rio Tinto and BHP Billiton of Austratlia, are also negotiating with China for a much higher price.

NMDC, India's largest producer of iron ore may also follow the global trend and raise prices by not less than 65 percent from April, 2008. Domestic steel players like Ispat, Essar and the Jindals who buy iron ore from the open market on a spot basis and on long term contracts from NMDC, will have to pay the at higher rate and will have no option but to raise steel prices. According to experts the impact of iron ore prices will about US $80 or more per tonne of steelmaking.

Conclusion

Abundant availability of iron ore is a major strength of the Indian steel industry. But medium and low grade ore now available requires beneficiation for use in steelmaking. The huge quantities of fines generated during mining have to be used by sintering / pelletisation. High volume of export together with massive domestic demand in future will deplete India's iron ore resources and the country may have to import iron ore by 2055 if exploration is not acetated and new deposits are discovered. Modern technologies for beneficiation / pelletisation should be introduced on a large scale for utilization of low grade ores and fines. A balanced and all pervading new mineral policy with scientific approach and ensuring the interest of the Indian steel industry is essentially required in national interests.