THE REPORT OF THE “EXPERT GROUP”  
ON PREFERENTIAL GRANT OF MINING LEASES  
FOR IRON ORE, MANGANESE ORE AND CHROME ORE

The Ministry of Steel, constituted an “Expert Group”, on 20th April 2005, for formulating guidelines for preferential grant of mining leases, for iron ore, manganese ore and chrome ore, by state governments.

COMPOSITION OF EXPERT GROUP:

The expert group was chaired by Shri R.K Dang, Former Secretary, Ministry of Mines and its members included representatives of departments/ministries, state governments, industry representatives and representatives from industry associations and experts in the area of environment and mining.

TERMS OF REFERENCE OF THE EXPERT GROUP:

The terms of reference of the group was to frame guidelines pertaining to iron ore, manganese ore and chrome ore for the purpose of giving preferential mining rights to certain persons by the State government under section 11 (5) of the MMDR Act

PRESENT STATUS:

The report of the “Expert Group” was submitted to the Ministry of Steel on 26th August 2005. The recommendations of the Expert Group are under examination.

The report of the “Expert Group” is being placed on the website of the Ministry only for the information of stake holders and the public. The recommendations of the “Expert Group”, contained in the report, are still under consideration of the Ministry of Steel and the Government. Nothing contained in this report constitutes policy of the Government on the issues dealt with by the “Expert Group”.

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CHAPTER-I

INTRODUCTION

1.1 Preliminary discussions on the Mines and Minerals (Development & Regulation) Act, 1957

1.1.1 The Mines and Minerals (Development and Regulations) Act, 1957 (As amended by Notification No.GSR 572(E) dated 16.8.2002) (called the Act hereafter), regulates the grant and operation of permits/licences/leases (called leases hereafter) for the extraction of, interalia, iron ore, manganese ore and chrome ore.

1.1.2 In the “PRELIMINARY” of the Act, it is declared in Section 2 as under:-

“Declaration as to the expediency of Union control

It is hereby declared that it is expedient in the public interest that the Union should take under its control the regulation of mines and the development of minerals to the extent hereinafter provided”

Subsequent provisions in the Act have, presumably, been made with care and deliberation, keeping in mind the geography and federal structure of India and to promote National interest.

1.1.3 In the matter of interse priority for grant of leases, other things being equal, the Act stipulates adherence to ‘First Come First Served’ principle, but specifically provides for alternative determination of interse priority for preferential grant of leases in consideration of certain matters.

1.1.4 As per section 11(5) of the Act, however, the State Government may, for any special reasons to be recorded grant a reconnaissance permit, prospecting licence or a mining lease, as the case may be, to an applicant whose application was received later in preference to an applicant whose application was received earlier. The proviso states that prior approval of the Central Government shall be obtained before passing any order under this sub section of Section 11(5) in respect of minerals specified in the First Schedule of the Act (Excerpt at Annexure-I).
1.1.5 While the principle of ‘first come first served’ is in keeping with constitutional provisions and the principles of natural justice, the Act clearly recognizes that it is not necessarily the best or only criterion to govern grant of mineral concessions to serve the national interest. In fact, section 11(3) of the Act read with Section 11(2) specifically provides for determining interse priority among lease applicants, not on the ‘first come first serve’ basis but on the basis of knowledge, experience, resources, development of downstream industry etc. and “such other matters as may be prescribed” (excerpt at Annexure-II).
1.2 **Background of developments leading to constitution of the Expert Group.**

1.2.1 In the 1st meeting of the Project Coordination Group (PCG) held on 22.12.2004 under the Chairmanship of Hon'ble Steel Minister, a decision was taken that Ministry of Steel, in consultation, with Ministry of Mines and based on the deliberations in the above mentioned meeting, would prepare guidelines for State Governments to recommend mining leases. A decision was also taken for proposing required amendments in the MMDR Act.

1.2.2 Various State Governments e.g. Orissa, Karnataka, Chhattisgarh and Jharkhand have been framing divergent guidelines and criteria for assigning interse priority for recommending preferential grant of leases for these minerals to the Central Govt. in terms of section 11(5) of the Act. The local guidelines and the special reasons for making departure from ‘first come first served’ principle have, not infrequently, been of a case to case and ad-hoc nature - not altogether in conformity with the letter and the purpose of the MMDR Act and the related National Mineral Policy e.g. some State Governments have shown inclination to accord preference to applicants who agree to put up mineral based downstream industry within the State boundaries. The Act does not appear to provide any legitimacy for such stipulation. This has caused anomalies leading to a large number of Revision Petitions under section 30 of the Act read with Rule 54 of Mineral Concession Rules, Court cases and prolonged bottlenecks in grant and delay in operation of leases for Iron Ore etc. to service the steel and ferrous industry.

1.2.3 Iron ore, manganese ore and chrome ore are critical raw material inputs for the steel industry. Their timely and assured availability in adequate quantity and quality on long term basis is a *sine qua non* for the rapid and orderly growth of the steel and ferrous industry which is a core sector of the national economy. Against this background, Ministry of Steel constituted a Group of Experts to undertake an in-depth examination and frame a set of uniform National Guidelines for a system of Preference to be followed in grant of leases for iron ore, manganese ore and chrome ore.
1.3. Notification, Terms of Reference, Objective of the Group of Experts and Members & Resource Persons

1.3.1 Constitution of the Expert Group

An Expert Group under the Chairmanship of Shri R.K. Dang, IRTS (Retd.), ex-Secretary, Ministry of Mines was constituted as per office order number 15(9)/2004-RM-I dated 20th April, 2005 for formulating National Guidelines on Iron Ore Mining as per Section 11(5) of Mines and Minerals (Development & Regulation Act), 1957 with the following composition: (Annexure-III)

1.3.2 Composition

1. Shri R.K. Dang, IRTS (Retd.), Ex-Secretary, Ministry of Mines -- Chairman
2. Director General, Indian Bureau of Mines -- Member
3. Managing Director, Tata Iron & Steel Company -- Member
4. Chairman, Steel Authority of India Limited -- Member
5. Executive Director, Sponge Iron Manufacturers Association -- Member
6. CMD, National Mineral Development Corporation Limited -- Member
7. Director General, NEERI -- Member
8. Secretary General, Federation of Indian Mineral Industries -- Member
9. Principal Secretary (Mines), Government of Karnataka -- Member
10. Principal Secretary (Mines), Government of Orissa -- Member
11. Joint Secretary, Ministry of Mines -- Member
12. Shri Moosa Raza, President, Indian Steel Alliance (Inducted on 26.5.2005) -- Member
13. Shri Ajoy Kumar, Joint Secretary, Ministry of Steel -- Member Convener

1.3.3 Terms of Reference

“To formulate guidelines pertaining to Iron Ore, Manganese Ore and Chrome Ore regarding giving preferential mining rights to certain persons by the State Government under section 11(5) of MMDR Act, 1957”.

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1.3.4 **Objective of the Group of Experts**

The issue of critical importance, therefore, is to evolve a reasonable, uniform and optimum set of criteria which is in line with the purposes, the letter and the spirit of the Act and is also in harmony with national interest so that it can serve as a touchstone to guide State Governments for the “special reasons to be recorded” for preferential grant of RP/PL/ML under the provisions of section 11(5) of the Act. The same set of criteria should also be useful with regard to “such other matters as may be prescribed” under section 11(3)(e) of the Act, if required.

The ethos and broad direction of the exemplary factors mentioned in section 11(3)(a) to (d) of the Act clearly indicate that their purpose is to promote all round efficiency in mining operations and promotion of industry based on the minerals extracted i.e. value addition. The specific enabling clause 11(3)(e) has to be viewed in the backdrop of the revealed ethos of sub-section 11(3)(a) to (d) so as to give practical form and substance to the omnibus open field of “any special reasons to be recorded” in section 11(5) of the Act in a pragmatic and harmonious manner.

1.3.5 The proposed national guidelines for a Scheme of Preferences must, of course, conform to the letter and the spirit of the Act and Mineral Concession Rules but they must do more than that. They must also harmonise and sub-serve the National Mineral Policy, draft National Steel Policy, National Industrial Policy and broader national objectives.

1.3.6 Some of the important parameters which have been kept in view in evolving the Scheme of Preferences are flagged below:-

i) **The overarching sanctity of the Constitution and the Federal structure of India**;  
ii) The global steel and iron ore scenario and India’s place therein. Learning from experience of other countries that pioneered and developed the steel industry;  
iii) Careful husbanding and efficient utilization of the precious non-renewable national ferrous mineral resource base for rapid and
sustainable development of a globally competitive steel and ferrous industry, as an important component of national policy objectives;

iv) Leveraging India's natural advantage in mineral resource to generate multi-level value addition and expansion of domestic product;

v) Employment generation in primary, secondary and tertiary sector;

vi) Harmonizing legitimate State aspirations with national interest;

vii) An accelerated but smooth transition from past dependence on Iron Ore/Chrome Ore/Manganese Ore as important components of exports and foreign exchange earning to a proximate future of conversion of these minerals into value added downstream steel, and other ferrous products to meet expanding domestic per capita consumption and a more profitable globally competitive and sustainable export profile of value added products like quality steels.

viii) Sloping off of iron ore exports has to be gradual and carefully calibrated both in terms of quality and quantity in synchronization with the increasing domestic demand for steel production progressively leading to reduced iron ore surpluses for exports and without causing disruption to the large contribution to employment and economic activity which iron ore mining is making in widely dispersed and remote areas of Goa, Karnataka, Orissa, Jharkhand etc.

(ix) Identifying reasons and remedies for the wide gap between paper and ground reality in the grant and actual operation of mining leases e.g. over 50% of iron ore mining leases are currently dormant! Identifying measures for minimizing the procedural, administrative, legal, environmental and other bottlenecks in ferrous mining in order to make the proposed Scheme of Preferences translate into actual ground reality of mineral extraction.

x) Promoting scientific and efficient mining operations with special emphasis on internalizing environmental concerns in an integrated matrix of sustainable mining and development.
1.4. Methodology adopted by Expert Group – Records of meetings and hearings

1.4.1 Evolving national guidelines for according inter-se preference between applicants for mining leases under the MMDR Act cannot be undertaken in vacuum. Such a Scheme of Preferences must pass the test of scrutiny of serving a larger public purpose and national interest so far as this relates to Regulation and Development of Minerals, within the meaning of the Act. Such a larger purpose, in relation to Iron Ore, Manganese Ore and Chrome Ore is to expedite and assure the timely availability of right quality and quantity of these minerals on long term basis for the planned development of the domestic steel industry for at least next half century.

1.4.2 Special invitations were sent out to Mining Secretaries of Governments of Chhatisgarh & Jharkhand. Chairman, Convener and Secretarial officers had exhaustive discussions with them to ascertain perspective of their respective State Governments with regard to the Scheme of Preferences for mining leases.

1.4.3 Secretary, Industry & Mining, Govt. of Karnataka (member) attended the first meeting of the Group but was unable to attend the second/third meetings due to heavy pre-occupations with official work and Assembly session. She was however able to come for individual discussions on 9.8.2005 with Chairman and Convenor. Members of the Expert Group were deprived of the benefit of her active participation in the deliberations of the final Group meetings held on 12.8.2005 and 17.8.2005.

1.4.4 Representatives of Federation of Indian Mineral Industry (FIMI) actively participated in the first two meetings of the Group on 13.6.2005 and 22.6.2005 and also had several individual sessions with Chairman, Convenor and secretarial officers. Though he attended the first session of the Final meeting on 12.8.2005 when the draft Preferences and other documents were tabled, he chose not to attend the postponed session on 17.8.2005 when the Group’s recommendations were finalized. He has sent a dissent note which, along with Chairman’s reply, is Annexed with this report.
1.4.5 Ministry of Mines, from inception, took the view that since the Group’s recommendations would have to be processed by the Ministry of Mines, it would not be appropriate for them to participate in the deliberations of the Expert Group. The Group of Experts has felt disadvantaged for want of valuable advice of the Ministry of Mines. The representative of Indian Bureau of Mines, participated in the first two meetings of the Group but, apparently, under advice from the Ministry of Mines, he abstained from the final meeting when the report was adopted.

1.4.6 The issue of according inter se priority and preferences in mineral concessions within the ambit of the provisions of the MMDR Act, is necessarily beset with conflicts of interests not only between iron ore Producers and Users but also within the family of users and even between the perceived interests of the different State Governments.

1.4.7 The most careful consideration has been given to divergent views and opinions of the different interest groups and every attempt made to find common ground as far as possible.

1.4.8 In the backdrop of the disparate nature of the group and the inherent incompatibility of the interests of different groups, there has necessarily been significant divergence in views on important issues. This includes State Governments, Public Sector and Private Sector Enterprises.

1.4.9 The final recommendations of the Expert Group, wherever such direct conflicts of interest groups pre-empt consensus, ultimately, reflect the Chairman’s view tailored to serve national interest.

1.4.10 In addition to extensive interaction between the members of the Group, 3 formal meetings of the Group of Experts were held on 13.6.2005, 22.6.2005 and 12.8.2005. Memoranda were invited and received not only from members of the Expert Group but also from a large number of other Stakeholders, involved in the ferrous mining and user industry. The Chairman of the Group held formal and informal meetings and discussions with Group members, stakeholders and other interests. The Chairman also made a formal visit to Orissa on 16.6.2005. A meeting was organized by Secretary, Department of Steel & Mines, Govt. of
Orissa with a wide cross section of State Government officials, mine owners and representatives of sponge iron, mini blast furnace and other steel units. Courtesy meetings were also held with the Chief Minister and Chief Secretary, Govt. of Orissa.

1.5 **Resource Persons**

To deliberate upon the issues of according preferences for grant of prospecting/mining leases required lot of inputs from different specialists and experts in the field of iron and steel, mining, environment, etc. Services and inputs from all the persons have been very important and useful and are acknowledged. *(Annexure-IV)*

1.5.1 **Composition of the Report**

The report of the Group is presented in two parts as under:-

**Part-I: Report of the Expert Group as per Terms of Reference:**

- Chapter – I Introduction, with Preliminary discussions on the MMDR Act, 1957; Background of developments leading to constitution of the Expert Group; Notification, Terms of Reference, Objective of the Group of Experts; Methodology adopted by Expert Group – Resource Persons, Records of meetings and hearings.
- Chapter – II Global and Indian Steel Scenario
- Chapter – III Global and Indian Iron Ore Scenario
- Chapter – IV Salient issues and view points
- Chapter – V Chrome Ore and Manganese Ore
- Chapter – VI Recommendation on National Guidelines for Mining Leases – Iron Ore, Chrome Ore.

**Part-II**

(i) Summary of Memoranda, Record notes of meetings and other Annexures.
EXTRACTS TAKEN FROM MINES & MINERALS (D&R) ACT, 1957

11. Preferential right of certain persons

(5) Notwithstanding anything contained in sub-section (2), but subject to the provisions of sub-section (1), the State Government may, for any special reasons to be recorded, grant a reconnaissance permit, prospecting licence or mining lease, as the case may be, to an applicant whose application was received later in preference to an application whose application was received earlier:

Provided that in respect of minerals specified in the First Schedule, prior approval of the Central Government shall be obtained before passing any order under this sub-section.

FIRST SCHEDULE

SPECIFIED MINERALS

[Section 4(3), 5(1), 7(2) and 8(2)]

PART A

HYDROCARBONS / ENERGY MINERALS

1. Coal and lignite.

PART B

ATOMIC MINERALS

1. Beryl and other beryllium-bearing minerals.
2. Lithium bearing minerals.
3. Minerals of the “rare-earths” group containing uranium and thorium.
5. Phosphorites and other phosphatic ores containing uranium.
6. Pitchblende and other uranium ores.
7. Titanium bearing minerals and ores (ilmenite, rutile and leucoxene.
8. Tantalium –bearing minerals.
9. Uraniferous allanite, monazite and other thorium minerals.
10. Uranium bearing tailings left over from ores after extraction of copper and gold, ilmenite and other titanium ores.
11. Zirconium bearing minerals and ores included Zircon.

1 - Substituted by Central Act 265 of 1994
EXTRACT TAKEN FROM MINES & MINERALS (D&R) ACT

PART C

METALLIC AND NON-METALLIC MINERALS

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<tr>
<td>9</td>
<td>Manganese ore</td>
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<tr>
<td>10</td>
<td>Precious stones</td>
</tr>
<tr>
<td>11</td>
<td>Zinc</td>
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</tbody>
</table>

(1) Where a reconnaissance permit or prospecting licence has been granted in respect of any land, the permit holder or the licensee shall have a preferential right for obtaining a prospecting licence or mining lease as the case may be, in respect of that land over any other person:

PROVIDED that the State Government is satisfied that the permit holder or the licensee, as the case may be,-

(a) has undertaken reconnaissance options or prospecting operations as the case may be, to establish mineral resources in such land;
(b) has not committed any breach of the terms and conditions of the reconnaissance permit or the prospecting licence;
(c) has not become ineligible under the provisions of this Act; and
(d) has not failed to apply for grant of prospecting licence or mining lease, as the case may be, within three months after expiry of reconnaissance permit or prospecting licence, as the case may be, or within such further period as may be extended by the said government.

(2) Subject to the provisions of sub-section (1), where the State Government has not notified in the Official Gazette the area for grant of reconnaissance permit or prospecting licence or mining lease, as the case may be, and two or more persons have applied for a reconnaissance permit, prospecting licence or a mining lease in respect of any land in such area, the applicant whose application was received earlier, shall have the preferential right to be considered for grant of reconnaissance permit, prospecting licence or mining lease, as the case may be, over the applicant whose application was received later:

PROVIDED that where area is available for grant of reconnaissance permit, prospecting licence or mining lease, as the case may be, and the State Government has invited applications by notification in the Official Gazette for grant of such permit, licence or lease, all the applications received during the period specified in such notification and the applications which had been received prior to the publication of such notification in respect of the lands within such area and had not been disposed of, shall be deemed to have been received on the same day for the purpose of assigning priority under this sub-section:

PROVIDED FURTHER that where any such applications are received on the same day, the State Government, after taking into consideration the matter specified in sub-section (3), may grant the reconnaissance permit, prospecting licence or mining lease, as the case may be, to such one of the applications as it may deem fit.
(3) The matter referred to in sub-section (2) are the following:

(a) any special knowledge of, or experience in, reconnaissance operations, prospecting operations or mining operations, as the case may be, possessed by the applicant;
(b) The financial resources of the applicant;
(c) The nature and quality of the technical staff employed or to be employed by the applicant;
(d) The investment which the applicant proposes to make in the mines and in the industry based on the minerals;
(e) Such other matters as may be prescribed.

(4) Subject to the provisions of sub-section (1), where the State Government notifies in the Official Gazette an area for grant of reconnaissance permit, prospecting licence or mining lease, as the case may be, all the applications received during the period as specified in such notification, which shall not be less than thirty days, shall be considered simultaneously as if all such applications have been received on the same day and the State Government, after taking into considered the matters specified in sub-section (3), may grant the reconnaissance permit, prospecting licence or mining lease, as the case may be, to such one application as it may deem fit.

(5) Notwithstanding anything contained in sub-section (2), but subject to the provisions of sub-section (1), the State Government may, for any special reasons to be recorded, grant a reconnaissance permit, prospecting licence or mining lease, as the case may be, to an applicant whose application was received later in preference to an application whose application was received earlier.

Provided that in respect of minerals specified in the First Schedule, prior approval of the Central Government shall be obtained before passing any order under this sub-section.
SUBJECT: NATIONAL GUIDELINES ON IRON ORE MINING.

As per Section 11(5) of Mines and Minerals Development & Regulation Act, 1957, the State Government may, for any special reasons to be recorded grant a reconnaissance permit, prospecting licence or a mining lease as the case may be to an applicant whose application was received later in preference to an applicant whose application was received earlier.

The proviso states that prior approval of the Central Government (Ministry of Mines) shall be obtained before passing any order under section 11(5) in respect of iron ore, which is mentioned in the First Schedule of MMDR Act.

State Governments of Orissa, Karnataka and others have been making guidelines for assigning inter se priority and fixation of criteria for recommending iron ore mining leases to the Central Government as per Section 11(5) of MMDR Act, 1957.

Against this background it has been decided to constitute an expert group for formulating Guidelines in this regard.

Composition

1. Shri R.K. Dang, IAS (Retd.), Ex-Secretary, Ministry of Mines – Chairman
2. Director General, Indian Bureau of Mines – Member
3. Managing Director, Tata Iron & Steel Co. – Member
4. Chairman, Steel Authority of India Ltd. – Member
5. Executive Director, Sponge Iron Manufacturers Association – Member
6. CMD, National Mineral Development Corp. Ltd. – Member
7. Director General, NEERI – Member
8. Secretary General, Federation of Indian Mineral Industries – Member
9. Principal Secretary, (Mines), Govt. of Karnataka – Member
10. Principal Secretary, (Mines), Govt. of Orissa – Member
11. Joint Secretary Ministry of Mines – Member
12. Shri Ajoy Kumar, Joint Secretary, Ministry of Steel – Member-Convener

(Telephone 011-23015896; Fax 011-23015522)
**Term of Reference**
To formulate guidelines pertaining to Iron Ore, Manganese Ore and Chrome Ore regarding giving preferential mining rights to certain persons by the State Government under section 11(5) of MMDR Act. 1957.

**Tenure**
3 months from the date of notification.

**Report**
Report to be submitted to Secretary (Steel) within 3 months.

s/d

(Ashutosh Baranwal)
Director

Copy for information to:-

All Members of the Committee
PS to Steel Minister, Sr. PPS to Secretary (Steel)
ACKNOWLEDGEMENTS

A. **Members of the Expert Group:**

1. Shri Bhaskar Chatterjee, Principal Secretary (Mines), Govt. of Orissa
2. Mrs. Latha Krishna Rao, Principal Secretary(Mines), Govt. of Karnataka
3. Shri C.P. Ambesh, Director General, Indian Bureau of Mines
4. Shri B. Muthuraman, Managing Director, Tata Iron & Steel Co.
5. Shri V.S. Jain, Chairman, Steel Authority of India Ltd.
6. Shri B. Ramesh Kumar, Chairman-cum-Managing Director, National Mineral Development Corporation Ltd
7. Shri S.S. Bhatnagar, Executive Director, Sponge Iron Manufacturers Association
8. Shri S.K. Devoota, Director, National Environmental Engineering & Research Institute
9. Shri R.K. Sharma, Secretary General, Federation of Indian Mineral Industries
10. Shri Prashant Mehta, Joint Secretary, Ministry of Mines
11. Shri Moosa Raza, President, Indian Steel Alliance
12. Shri Ajoy Kumar, Joint Secretary, Ministry of Steel – Member Convenor

B. **Other Stakeholders**

1. Shri Shiv Raj Singh, Secretary, Industries & Mining Resources Deptt., Govt. of Chhattisgarh.
2. Shri Arun Kumar, Secretary, Mining & Industries, Govt. of Jharkhand
3. Shri S.D. Kapoor, Chairman, MMTC Ltd.
4. Shri P. Ganeshan, Chairman, Kudremukh Iron Ore Co. Ltd.
5. Shri V.K. Uppal, Chairman, Sponge Iron India Ltd.
6. President, Association of Indian Mini Blast Furnaces
7. Kirloskar Brothers Ltd.
8. Steel Furnace Association of India
9. Managing Director, Orissa Mining Corporation
10. Essar Steel Ltd.
11. Sesa Goa Ltd.

C. **Other Resource Persons:**

1. Mrs. T. Chandni, Addl. Director, Ministry of Environment & Forests
2. Mrs. Asha Rajvanshi, Director, Wild Life Institute of India
3. Shri B.K. Mohanty, Former Director, Mining & Geology, Govt. of Orissa
4. Dr. S.K. Gupta, Chairman, Eko Coke Ltd. & former Chairman, MECON; Jindal Vijayanagar Steel Ltd.
5. Shri M.P. Srivastava, General Manager, RDCIS, Steel Authority of India Ltd., Ranchi
6. Dr. T. Mukherjee, Chairman, Tata Metallics & JMD, TISCO
7. Shri D.K. Sahni, former CMD, Manganese Ore India Ltd., Nagpur
8. Shri S.R. Jain, former Chairman, Steel Authority of India Ltd.
9. Dr. B. Panda, Indian Metal & Ferro Alloys Ltd.
10. Shri B. Saran, Chairman, Visa Industries Ltd.
11. Shri A.K. Shahi, ED & PLO, SAIL
12. Shri Kishore Sen, Dy. PLO, SAIL
13. Mrs. Chandni, Sr. Manager, SAIL
14. Shri Manoj Nehra, Dy. Manager, SAIL
# LIST OF MINI STEEL PLANT IN INDIA

Capacity as on 31st March'2005

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2.1 Introduction

2.1.1 Despite significant inroads by substitutes like aluminum and plastic, steel retains its dominating position in world industry. The production and per capita consumption of steel is a major contributor to a country’s GDP and an indicator of its industrial and economic strength. Since 1970’s and till 1995, world production of steel (crude steel) increased at a CAGR of around 1%. During the last decade, the growth rate has accelerated to an unprecedented 3.9%. This is mainly a reflection of the astonishing expansion of steel production by over 150 million tonnes in China. This has taken China’s steel production to a reported current level of over 300 mtpa. During 2004-05, India’s crude steel production is estimated at around 35 million tonnes. During the last 3 decades, Chinese share in global steel production has increased from 4% in 1975 to 26% in 2004. India’s share during the same period, increased from 1% to 3%. Japanese and North America production displayed continuous declining trends through this period. (See Graph 1 and Graph 2)

2.1.2 Per capita steel consumption in India is currently around 31 kgs. against a world average of 150 kgs., US consumption of 340 kgs and Chinese consumption of 200 kgs. The draft National Steel Policy projects Indian crude steel production of 110 mtpa and domestic consumption of 90 mtpa by 2019-2020, equating to a per capita consumption of over 80 kg.

2.2 Technology and Trends

2.2.1 A few general trends in technology and industry structure deserve mention:

i) The share of crude steel produced by other than conventional Blast Furnace route, (generically referred to as Direct Reduction) is progressively increasing at an accelerated pace during the last 2 decades
with a CAGR of over 10%; now accounting for 5% of global steel production. (See Graph 1)

ii) For steel production through the conventional Blast Furnace route, there is a clear trend towards larger size of Blast Furnaces and production per Furnace. This is paralleled by a reduction in the numbers of Blast Furnaces. In the developed countries, hot metal production per Blast Furnace has increased by 300% since 1970’s – from 0.4 mtpa to 1.4 mtpa. In the developing countries also, hot metal production has increased from 0.2 mtpa to 0.5 mtpa.

iii) Smaller Blast Furnaces continue to operate, for specific and unique reasons, as a “niche” segment. China is a special case, where very large numbers of smaller blast furnaces which mushroomed during the last 2 decades, now face restructuring. The new Steel Industrial Policy announced by the “China National Development and Reform Commission” stipulates a minimum blast furnace size of 1000 cu.mtr. or 0.5 mtpa against the world trend for a minimum of perhaps 2000 cu. Mtr. (1 mtpa). (See Graph 3)

2.3 Global Steel Prices

2.3.1 The global trend of steel prices over the past three decades is characterized by prominent cycles of highs and lows with multiple mini cycles and periods of extreme volatility. These price movements are linked to the typical harmonics of excess capacity and production creating inventory build-up, leading to uneconomic prices, in turn followed by closures and low stocks, restoring more remunerative prices, cyclically. During the last 2 years, however, world steel prices have shown never-before increases-triggered by unprecedented Chinese demand reaching a peak level of over US $ 600 per tonne for HR coil against the previous highest in 1996 of under US $ 500 per tonne and a median of perhaps US $ 300 per tonne. (See Graph 8 – page 41)

2.4 Search for New Technologies

2.4.1 Conventional blast furnace route of steel making is dependent on use of good quality coking coal. Worldwide, there is an extensive search for technologies to
Historical trend of growth in world steel production since 1970s averaged CAGR of 0.94% over two and a half decades from 1970-1995.

During the last nine years from 1995, the rate has accelerated sharply to 3.86%.

Out of the total increase of 180 million tonnes during this period, China accounted for 145 million tonnes.

Production based on Direct Reduction technology, which languished at insignificant levels till 1975, has shown steepening growth with a CAGR of 10.79% since 1975; now accounting for 5% of steel production.
Over the last 3 decades, North American global share has dropped from 18% to 13%, EU/EC share from 20% to 16% and Japan from 16% to 11%.

Chinese share has jumped from a mere 4% to 26%.

India’s share has increased only marginally from 1% to 3%.

Source: IISI
While crude steel production in the developed countries has tended to stagnate and stabilize, production in Japan shows a declining trend. Russian production suffered a sharp fall in 1990s following Perestroika, but has shown signs of steady recovery since then (figures are not comparable due to break up of the Russian Federation).

While Indian steel production grew at a CAGR of approximately 4.92% in the last four years, Chinese production grew at a CAGR 5.90% between 1973 to 1990 and is galloping at around 10.62% since then.

Provisional estimates of Indian crude steel production in 2004-05 (as per JPC) is 34.8 million tonnes. Chinese production during first half of 2005 (reported to IISI) was 165 million tonnes for a likely annualized rate of over 300 mtpa.

Source: IISI
The number of blast furnaces in the developed world is coming down dramatically; from 650 in 1977 down to 179 in 2005.

- Pig iron production per blast furnace in these countries has increased steadily from 0.43 mtpa to 1.4 mtpa; by 300%.

- In the developing world, pig iron production per blast furnace increased from around 0.2 mtpa to 0.5 mtpa and has a long way to go compared with the developed world.

- The world techno-economic trend is clearly towards larger size blast furnaces of capacity above 1 million tonne per blast furnace; broadly a size of 2000 cu.mtr.

Source: World Steel Dynamics #30
produce steel without use of coking coal due to repeated shortfalls in availability and high prices particularly during the last few years.

2.4.2 The larger proportion of world iron ore production becomes available in the form of fine material (fines) which has to be agglomerated either as pellet or sinter before it can be used in the blast furnace. Many of the new technologies under development therefore aim to use iron ore fines directly without agglomeration and without use of coking coal to make steel. These emerging technologies include the following:-

(a)  Hismelt being developed by RTZ and Nucor to make liquid pig iron from iron ore fines and non-coking coal.
(b)  ITmK3 process or Mesabi Nugget process to produce cold pig iron on a rotary hearth furnace with iron ore fines and non-coking coal.
(c)  The Corex/Finex process developed by POSCO of South Korea in collaboration with Voest Alpine of Austria to make liquid pig iron from iron ore pellets (in Corex) and iron ore fines (in Finex) with use of mainly non-coking coal. All these processes work at their optimum only with higher grades of iron ore above 65% Fe.

2.5  **Current Trends**

2.5.1 The current decade is witness to a snowballing global trend of amalgamations, mergers and consolidations within countries, within regions and transnationally. This has led to the consolidation of the industry in giant steel conglomerates of Arcelor, LNM Group, Thyssen Krupp, Nucor US Steel, POSCO, Chinese giants Bau Steel, Angang, Wuhan, etc. With their backward and forward linkages technology/financial strength and global reach these steel conglomerates pose a forbidding competitive challenge to middle level stand-alone plants producing commoditized steel products. Mid-size plants focusing on specialized high-end value added products and smaller local area plants customized to meet specialized niche and local demand segments alone may be able to hold ground. In short, the established and expanding integrated steel plant complexes in India also will need to acquire critical mass and strong backward and forward linkages
in order to effectively cope with the powerful dynamics of a globalised steel industry.

2.6 **INDIAN STEEL SCENARIO**

2.6.1 **Technology**

The most common process of producing steel consists of reduction of iron oxides in the Blast Furnace (BF) or in a Direct Reduction Plant (DR) followed by transformation of the iron to steel either in a Basic Oxygen Converter (BOF) or Electric Arc Furnace (EAF) or Induction Furnace (IF). As per International Iron and Steel Institute (IISI), 63% of global crude steel production was made through BOF and 34% through electric route in 2004. Corresponding figures for India are 57% BOF and 39% electric furnace. While the BOF process predominantly uses molten iron (Hot Metal) direct from blast furnace, the electric furnaces use a variety of material including Direct Reduced Iron and or Ferrous scrap.

2.6.2 The blast furnace process requires natural lump or agglomerated iron ore and cannot use iron ore fines as such. There are two main technologies for agglomeration, namely sintering and pelletization. Sinter is made by heat hardening of a mixture of iron ore and coal fines (a by product of coke oven batteries) while Pellets are merely heat-hardened iron ore bonded with Bentonite into pellets. Sinter plants are generally situated in the neighbourhood of blast furnaces while pelletizing plants are frequently located near the iron ore mines or near transshipment sites but may also be located near the blast furnaces. Charging of sinter and pellet in iron ore making to the extent of 60%-80% plus has become the norm world-wide as agglomeration enables use of iron ore fines/concentrates generated in the course of mining and beneficiation of iron ore. It also improves efficiency in the blast furnace process by ensuring a homogenized prepared raw material burden.

2.6.3 **Steel Production in India - Trends**

In India, all major integrated steel plants have come up on Blast Furnace technology. The production of Direct Reduced material started in late 1970’s with one small sponge iron plant in the public sector in Andhra Pradesh viz.,
Sponge Iron India Limited (SIIL). The production of crude steel increased only marginally in the decade 1975 to 1985 from 8 mtpa to 10.5 mtpa. The decade from 1985 to 1995 witnessed commissioning and stabilization of new integrated public sector plants doubling production to around 20 million tonnes with further increase to 25 million tonnes by the end of the millennium in 2000. Since then, following de-licensing and liberalization, a number of private sector players have entered the field and imparted new vigour to the rapid expansion of production. Perhaps even more important, they are breaking mental barriers by experimenting with new world class technologies and production paradigms. The CAGR of crude steel production which was 6.16% between 1975 to 1985, 6.54% between 1985 to 1995, 3.47% between 1995 to 2000 has increased to 6.75% since 2000 and displays a steepening trend. Side by side, the share of DR has increased to over 10 million tonnes, contributing 30% to overall Indian steel production. (See Graph 4)

2.6.4 Per capita steel consumption increased from 24 kg. in 1995 to a current level of 31 kg. Given a moderate to strong GDP growth rate of 7 – 8% and elasticity of 1, steel consumption is expected to grow to the level of 44.3 Kg. by 2010 and 90 kg. by 2019 at a CAGR of 7.4%.

2.6.5 The Indian scene is today witness to an exciting stage of experimentation with hybrid steel plants making various combinations of DR and new technologies with or without conventional blast furnace and down stream facilities.

2.6.6 These hybrid plants using either gas or non-coking/semi-coking cheaper coals are adopting various methodologies for energy optimization co-generation and other cost reduction practices.

2.6.7 They include various combinations of gas or coal based DR plants, with or without Blast Furnace. The DR products are used as intermediates for production of crude steel, HR coil and CR coil etc. Downstream operations in some cases are much like integrated steel plants; the main difference being in the raw material and first stage reduction.

2.6.8 The large size vertical shaft gas based plants like Essar Steel and Ispat Industries Limited are examples.
2.6.9 Essar Steel have a large dedicated pellet plant at Vizag linked by ocean transport to their DR plant at Hazira. Ispat Industries have both a DR plant and a blast furnace which they use according to alternative raw material availability and other factors. Vikram Industries is a sponge iron plant meeting customized needs of users with special requirements.

2.6.10 DRI is produced either in large vertical shaft gas based plants with capacity of 1-2 mtpa or in medium and small rotary kiln plants of widely varying capacity, from 20,000 tpa upwards to 0.2 mtpa. These plants use non-coking coal as a reductant. Production of DRI in India has gone up from about 5 million tonnes in 1999-2000 to over 10 million tonnes in 2004-05, making India the world’s largest producer. This has been accompanied by proliferation of tens of small rotary kiln DR (or sponge iron) plants. All DR plants ideally require very high grade hard lumpy iron ore or pellets with above 65% Fe content and superior low ash high activity coal or gas. Due to limited availability of such high grade iron ore and coal the DR plants which are designed to produce material of 92% plus metallic content, in fact produce much lower metallisation leading to inefficiencies and uneconomically high cost in down stream electric furnace operations. The coal based plants also contribute heavily to local environmental pollution.

2.6.11 Since it is not economically viable for the smaller DRI plants to add agglomeration facilities, they are presently dependent on the availability of high grade natural size lump ore (called calibrated lump ore or CLO). This is an incentive for sub-optimal selective high grade mining. The large integrated steel plants with blast furnace installations generally have attached agglomeration facilities by way of sinter and/or pellet plants of economic size and are therefore able to utilize the entire across the board mine production in an optimum manner.

2.6.12 With some similarities but using high quality semi-coking/non-coking coal is the integrated plant of Jindal Vijayanagar at Bellary. This JSW plant is based on modified Austrian (Voest Alpine) DR technology called COREX, developed in collaboration with POSCO. This plant has only one world peer in South Africa.
Production of steel through DR – EAF route avoids use of coking coal but needs very superior quality of iron ore between 64-67% Fe for best results.

Many of the private sector steel plants coming up in last decade are based on innovative technology optimizations using DR and conventional technology combinations.

Production of steel through Direct Reduction route has shown rapid increase since 1990 and is currently over 10 million tonnes; contributing some 30% to Indian steel production against global DR share of only 5%.

Source: SAIL Statistics
While the two COREX modules continue to produce some 1.5 mtpa, JSW has already re-routed for further expansion, towards conventional technology, with a 1.09 mtpa Blast Furnace commissioned in 2004 and a second one under construction. This will make JSW a fully integrated hybrid steel plant with a capacity going to 4.0 mtpa, capable of using a wide spectrum of raw material.

2.7 New Technology

2.7.1 POSCO of South Korea claim to have developed a new technology called Finex designed to use iron ore fines directly in reduction, without agglomeration in a small plant of capacity 1.5 lakh tpa. They have offered to set up similar capacity with Finex technology as part of the steel plant package offered for location in Orissa.

2.7.2 There is a very large number of other rotary kiln DR/sponge iron plants with capacity ranging from as low as 20,000 tpa to 300,000 tpa. Mention may be made of the bigger plants in this category e.g. Jindal Steel & Power at Raigarh is based on a large number of rotary kilns for production of sponge iron using non-coking coal and with sophisticated downstream facilities for long products. As also the Steel plant complexes of Monnet Ispat, Bhushan Steel etc.

2.7.3 Reliable details of DR plants are not available at one place since the industry is delicensed. Information available with the Committee suggests that there may be some 70/80 plants in Orissa alone (commissioned or proposed), 60 in Chhattisgarh and probably 150 to 200 plants in the country. All these plants essentially require high quality of hard lumpy calibrated ore or agglomerated pellets of +65% Fe and selected low ash high activity coals for their successful operation. Many of these plants/kilns are currently forced to operate with lower grade iron ore and sub-optimal grades of coal. This results in lower metallisation of 75-80%, higher generation of char and greatly increased downstream power consumption and inefficiencies in the smelting furnaces for steel production.

2.7.4 A list of mini steel plants showing capacities furnished by Joint Plant Committee is at Annexure-V.
2.7.5 After remaining stagnant in the previous decades, Indian crude steel production increased sharply from the level of 10 million tonnes in 1985-86 to 20 million tonnes in 1995-96 and crossed 30 million tonnes by 2002-03. There is a steepening trend of growth since 1990-91, specially in private sector production following liberalization of steel policy. As per the Draft National Steel Policy growth rate of steel production during the next two decades is projected at 7.4% as reflected in table below:

**Production, Imports, Exports and Consumption of Steel**

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Notes: mT = million tonnes. *Compounded Annual Growth Rate

2.7.6 Out of the current crude steel production of around 35 million tonnes, the main producers i.e. SAIL, RINL and TISCO account for some 20 million tonnes while three other plants of Essar, Ispat and Jindal Vijayanagar produces some 5 million tonnes.

2.7.7 The sponge iron producers using rotary kilns are estimated to have an aggregate capacity of 13 million tonnes and they contributed a production of over 10 million tonnes of sponge iron which was used as feed stock in electric furnaces and some blast furnaces. Electric Arc Furnaces, Induction Furnaces and Mini Blast Furnaces are currently estimated to have a capacity of around 14.5 million tonnes contributing some 9 million tonnes in production. (Note: The figures are not amenable to simple aggregation for reasons of duplication and also possible under reporting).

2.8 **The Projected Steel Industry Structure:**

2.8.1 **Iron Ore requirements of Indian Steel Industry**

As noted above, the present per capita steel consumption is 31 kg. per annum in India. This compares with 350 kg in developed countries, a world average of 150 kg and Chinese current consumption of 200 kg. The domestic consumption is projected to grow to 80 kg by 2019-20. This corresponds to the production target
of 110 million tonnes per annum, after factoring in imports/exports as per table given above. 60% of the production is expected to come through blast furnace route, 33% through sponge iron – electric arc furnaces and 7% through other routes. This would require an availability of around 180 million tonnes per annum of medium/high grade ore, after discounting scrap and re-cycling. Blast furnaces have the flexibility to use medium grades (62-64% Fe) and fines without loss of productivity and efficiency. Production through sponge iron-EF route, accounting for 33% or 35% million tonnes per annum would be dependent exclusively on the cream of high grade hard lumpy ores; which constitute only 9.7% of the country’s reserves; unless alternative feed stock such as agglomerates prepared from iron ore fines and concentrates are brought into use.

28.2 The Current annual domestic iron ore consumption of around 52 million tonnes has thus to continuously rise to a level of 180 million tonnes by 2020. Even if production is sustained at this level through the next 30 years, the cumulative requirement of Iron ore up to 2050 would be 6 billion tonnes. Assuming continuing increase in steel production beyond 2020 though at a lower CAGR of 3-5%, the cumulative ore requirement till 2050 would increase to 10 billion tonnes. This compares with the present estimates of recoverable reserves of 10 million tonnes of which only 6-7 million tonnes may be of high and medium grades; rest being low grade ores below 62% Fe not much used at present.

2.8.3 Exports of iron ore have sky rocketed during the last 4 years from an earlier stable range of around 35 million tonnes per annum to almost 80 million tonnes during 2004-05 on the back of huge spot demand and high prices from China leading to windfall profits for exporters. Continuing this level of exports would imply earmarking reserves of some 2.5 billion tonnes by 2050; mainly high and medium grade ores since there is no strong or sustained world market for low grade ores below 62% Fe.
2.8.4 In the perspective of assuring strategic iron ore security for a rapid and sustainable growth of our steel industry, the following important issues have to be borne in mind:

- Almost the entire known iron ore recoverable reserves in the proven and probable categories, totaling 10 billion tonnes, are just sufficient for our own requirements for the next 50 years.
- Steel capacity by blast furnace or any other route involves heavy capital outlay in the range of Rs. 4000 crores per million tonnes directly and additionally in related infrastructure. It has therefore necessarily to be backed up by secure raw material supply for a period of, preferably, 50 years or at least 30 years.
- Known reserves are adequate for our own steel industry, subject to progressively enhanced use of lower grades through beneficiation and blending practices, optimum mining and conservation techniques and successful resolution of mine working and environment/forest conservation conflicts in a time bound manner.

2.8.5 The long term requirements of iron ore worked out for the phased increased of production from current level of 35 million tonnes to 110 million tonnes by 2019-20 and to 2050 would be in the order of 6 billion tonnes. The presently estimated recoverable resource of Hematite is placed at 10 billion tonnes, including low grade i.e. 60-62% Fe. High grade including both lump and fines, is only one billion tonne. There are, however, three positive factors to be noted. Firstly, continuing geological investigations in and outside lease areas will undoubtedly add to the current reserve estimates in a big way. During the last decade 1990-2000, 900 million tonnes of additional reserves have been so added by IBM. Secondly, there are large reserves of in-situ material and dumps with Fe content between 55% and 60% which is not at present included in IBM inventory of ‘iron ore.' If policies are implemented to concurrently mines, reclaim, beneficiate and use this material below 60% Fe, it will enhance the usable reserves greatly. Lastly, there is a huge resource base of 10.8 billion tonnes of Magnetite ore with an iron content of perhaps 4 billion tonnes waiting to be utilized.

2.8.6 Over all, there is clearly a need for conservation at a strategic level but no justification for any sudden disruptions.
2.9 Conclusion

- With current conventional technologies Indian steel industry is disadvantaged by uncertain availability and high cost of coking coal in addition to relatively higher cost of capital and energy. One major competitive advantage for Indian steel, apart from human resources, would appear to lie in assured access to indigenous iron ore supplies at a discount to world prices. This advantage must be preserved, nurtured and fully leveraged.

- Indian crude steel production is projected to grow from current level of 35 million tonnes to 110 million tonnes by 2019-20 and per capita consumption of 31 kgs. to over 80 kgs.

- Cumulative iron ore requirements (@ 1.6 tonnes of iron ore to 1 tonne crude steel) from the present upto 2050 would be around 6 billion tonnes of 64% Fe equivalent; after allowing for 10% production through scrap and assuming a 100 million tonnes plateau beyond 2020. Assuming continued growth of steel production at a CAGR of 5% beyond 2020, cumulative iron ore requirements upto 2050 would aggregate to around 10 billion tonnes, including low grade.

- The newer Direct Reduction processes necessarily require high grade iron ore, including fines. The higher grades of iron ore, therefore, need to be specially conserved and reserved to provide durable competitive advantage to Indian steel industry.

- The projected growth of steel consumption is predicated on certain assumptions of economic growth relating to GDP in manufactures and industry. There have been major shortfalls against earlier forecasts and projected targets of steel production/consumption, pointing to the need for greater realism.

- Consolidation and global integration of larger Indian steel companies to attain critical mass and obtain an edge may be essential for a globally competitive Indian steel industry.
CHAPTER III
Global Indian iron ore and scenario

3.1 IRON –ORE: INTRODUCTION.

Iron is a giant among metals. It is the most useful metal known and after aluminum it is the most widely distributed and abundant metal. It comprises about 5% of the earth’s crust by weight. Iron ore is the basic raw material for the iron and steel industry.

3.2 IRON ORE-WORLD SCENARIO

3.2.1 WORLD RESERVES

As per Mineral Commodity Summaries, published by US Geological Survey in January 2005, the total ‘reserve base’ of crude ore in the world is placed at 370 billion tonnes. By iron content this reserve base is 180 billion tonnes. These summaries show that Ukraine has the largest reserve base of crude ore at 68 billion tonnes followed by Brazil, Russia, China, Australia, Kazakhstan, USA and India. In terms of iron content, the largest reserve base is in Brazil followed by Russia, Australia, Ukraine, China, Kazakhstan, and India. (ANEXURE I). Graphic 1 depicts the reserves in some select countries. The US Geological Survey also estimates the total world ‘Resource’ of crude iron ore to be in excess of 800 billion tonnes with iron content of over 230 billion tonnes. (In USGS nomenclature ‘Reserves’ refers to practically extractable and usable ore while ‘Resource’ includes much more and is therefore a much higher figure).

3.2.2 WORLD PRODUCTION.

As per statistics published by the US Geological Survey world production of iron ore in 2004 was 1250 million tonnes as against 1160 million tonnes in 2003. China was the largest producer of iron ore during 2004 and India was the fourth largest producer of iron ore during that year. (ANNEXURE 1). Graphic 2 depicts
the historical trend of iron ore production in select regions and countries. Historically western European countries have seen the steepest fall in iron ore production. Some noteworthy aspects about world iron ore production are:

- China has increased production 7 fold but is also the largest importer of iron ore; due to the low Fe content of Chinese ore.
- Brazil and Australia have huge reserves, which are much in excess of their domestic requirements. They have promoted huge investments in expanding production of iron ore for exports. In the last 15 years these two countries have added 180 million tonnes of iron ore production capacity.
- India, China, Brazil and Australia logged growth rates of over 10% in iron ore production. (source UNCTAD).

3.2.3 WORLD DEMAND

Demand for iron ore will expand in line with the growth in production of iron and steel. In 2003 the apparent consumption of iron ore was 1.2 billion tonnes (IISI) with China accounting for 401.4 million tonnes followed by Japan at 131.9 million tonnes. CIS countries accounted for a total demand of 142.2 million tonnes. (ANNEXURE 2). Given the increase in pig iron and DRI production by over 7% in 2004 over 2003 demand for iron ore has also grown in 2004 in similar proportion.

During recent years China has emerged as the dominant centre of demand growth for world iron ore surpassing Japan. This growth in Chinese demand for iron ore has had a marked impact on all iron ore producers, including Australia and Brazil, and they have invested in new capacities to meet Chinese demand. The output from all iron ore projects planned to be commissioned before 2009 is estimated to be more than one-third of their present total iron ore production.

The proximate prospects for growth in iron ore demand will continue to be primarily dependent on the way the Chinese steel industry goes. Chinese demand is expected to remain strong given the need to maintain steel production and offset the low grades of ore produced domestically. Furthermore, world demand for ore is also likely to be sustained by the anticipated development of downstream steel making facilities.
Iron ore is the most abundant metallic mineral in the earth's crust. Global iron ore recoverable resource is estimated at 800 billion tonnes, containing 230 billion tonnes of iron.

Australian, Brazilian and Indian iron ore are generally higher grade (63-65% Fe) compared to USA and China.

India ranks 9th in reserves and 8th in iron content.

In terms of iron content, Brazil, Russia, Australia and Ukraine each are endowed with 3-6 times India's reserves.

China has 2.5 times India's reserves in terms of iron content. Yet it is currently the World's largest iron ore importer (208 million tonnes in 2004).

Source: USGS
Over the last three decades, West European countries have seen the steepest fall in iron ore production e.g. France, from 50 million tonnes to nil at present.

Brazil and Australia with their huge reserves much in excessive of domestic consumption have, with massive foreign strategic investments, continuously expanded production for exports.

During the last 15 years since 1990, Brazil and Australia have together added 180 mtpa capacity.

Chinese domestic production has also multiplied 7 times in the last three decades to the level of 280 million tonnes but due to low Fe (35 – 40 %) content, China is also the world’s largest importer of ore (208 million tonnes in 2004).

Indian production hovered below 50 million tonnes till 90’s due to limited domestic and export capacity but has skyrocketed to 135 mtpa during the last 5 years in the wake of huge Chinese demand and unprecedented increase in spot prices from $25/30 to a peak of $80/tonnes F.O.B.

ISI, For the year-2004-USGS, India Production (provisional)-IBM
> Indian iron ore exports have been traditionally range bound; between 35-45 mtpa, till only 5 years ago.

> India is a peripheral player in world iron ore trade. Indian exports are barely a quarter of exports by Australia or Brazil.

> Exports have almost doubled to the level of 78 million tonnes in 2004-05, in the wake of runaway Chinese 'spot' demand during the last four years, OGL policy for exports of all iron ore with Fe content upto 64% and quantitative licenses issued for highest grades with no limit on Fe content.

*British Geological Survey*
Australian exports constitute almost 90% of Australian iron ore production.

Indian exports were, till recently, in the region of 50% of production, but during 2004, due to heavy Chinese demand and very high spot prices, production increased sharply and 60% was exported.

Source: British Geological Survey, IBM
in Brazil as also due to the likely increase in domestic ore consumption in India in the years to come.

### 3.2.4 WORLD TRADE

According to the latest UNCTAD report on the iron ore market, world iron ore trade reached a new record level in 2004. Exports of iron ore increased for the third year in a row and was up by 8.5% over 2003, to reach a level of 634 million tonnes during 2004. The UNCTAD report also states that iron ore exports have grown by 60% since 1990 and this represents a rate of growth that is twice that of world iron ore production itself. Exports of iron ore by developed countries, excluding Australia, fell by 10% between 1990 and 2004. Exports of iron ore from CIS countries also fell by 10% during this period. In contrast, exports of iron ore from Australia rose by 110% between 1990 and 2004 and those from developing countries rose by 59% during the same period.

As regards share of the iron ore export market during 2004, while developing countries accounted for 51% of the exports, developed countries accounted for 40% of the exports and the CIS countries for 7.5%. Among individual countries, Australia was the largest exporter of iron ore during 2004, followed by Brazil and India. Other important iron ore exporting countries are South Africa, Mauritania, Russia and Ukraine.

In so far as imports of iron ore are concerned, European countries accounted for 26% of the world imports during 2004 at 169.3 million tonnes. Developed market economy countries accounted for about 56% of world imports and as a group, developing countries accounted for 44% of total imports during 2004. Among various iron ore importing countries, China has moved ahead of Japan as the world's largest iron ore importer at 208 million tonnes of ore in 2004; which is 32% of total world imports during the year. Japan was the second largest importer of iron ore at 134.9 million tonnes during 2004. Korea was the third largest importer. China, Japan and Korea put together accounted for 59% of world iron ore imports in 2004. Data on world exports extracted from the UNCTAD Report for the period 1995-2004, is given in Annexure 3 and that on world imports, for the same period, is given in Annexure 4. Indications from the first few months of 2005 indicate that growth in iron production and trade will continue at the same high rate as through 2002-04.
Data on iron ore trade relating to Australia, Brazil and India, sourced from British Geological Survey, is given in Graphic 3. It would be seen from the chart that India, a distant third largest exporter of iron ore, is but a peripheral player in world iron ore trade with Indian exports being barely a quarter of the exports undertaken by Australia or Brazil. Indian exports have also been traditionally range bound and until 5 years ago have hovered between 35 and 45 million tonnes per annum.

3.3 IRON-ORE –INDIAN SCENARIO:

3.3.1 RESERVES OF IRON ORE:
The US Geological survey, Mineral Commodity Summaries, January 2005 places India’s crude ore reserve base at 9.8 billion tonnes with a iron reserve base of 6.2 billion tonnes.(ANNEXURE 1). However, as per IBM the total in-situ reserves of iron ore (as on 1.4.2000) were 17.7 billion tonnes. Of this 8.57 billion tonnes constitute proven reserves. The balance falls in the category of probable and possible reserves.(ANNEXURE 5). Haematite reserves, found mostly in Orissa, Jharkhand, Chattisgarh, Karnataka and Goa, constitute 75 % of iron reserves at 12.31 billion tonnes. Magnetite reserves, found in Karnataka, Andhra Pradesh, Goa, and Kerala, are at 5.395 billion tonnes. Estimates of magnetite “resources” have been just been revised to 10.682 billion tonnes by IBM under UN CF nomenclature. (ANNEXURE 6). Of the total recoverable reserves of haematite 1.30 billion tonnes is high grade ( +65 % Fe ), 5.06 billion tonnes is medium grade (62-65 % Fe) , 2.46 billion tonnes is low grade (below 62 % Fe ) and 1.06 billion tonnes is unclassified and others (Annexures 7 & 8). Of the proven haematite reserves of 6.8 billion tonnes ,1.05 billion tonnes is high grade (+65 % Fe), 3.69 billion tonnes is medium grade (62-65 % Fe), 1.74 billion tonnes is low grade (below 62 % Fe). The balance is unclassified and others. It may also be noted that between 1990 and 2000 there has been a net increase in the overall resource position, as estimated by IBM, by 877 million tonnes but a reduction of 137 million tonnes in high grade category after mining of 653 million tonnes of iron ore during the same period.
- High grade reserves of (Fe > 65%) Haemetite iron ore are estimated at only 14% of the total Indian reserves. They are located mainly on Orissa, Chhattisgarh and Karnataka.
- Orissa has the largest deposits of high grade and medium grade Haemetite iron ore.
- Goan iron ores are mostly of low grade with some of medium grade. Mineralogical characteristics of Goan iron ores, however, render them relatively more amenable to beneficiation.

Source: IBM, Nagpur
The natural grade of Magnetite ores is very low; in the region of 30-35% Fe.
Out of estimated magnetite reserves of 3.5 billion tonnes, 2.9 billion tonnes are in the state of Karnataka and this includes the Kudremukh mine.
Magnetite (Fe$_3$O$_4$) is however, amenable to easier beneficiation through magnetic separation to produce very high grades of concentrate of up to 68% Fe. This is premium material for production of pellets in direct reduction furnaces.

Source: IBM Nagpur
3.3.3 PRODUCTION OF IRON ORE:

Production of iron ore increased from 74.94 million tonnes, in 1999-2000, to 99.07 million tonnes in 2002-03, to 120.6 million tonnes in 2003-04 and to 145 million tonnes (estimated) in 2004-05. (ANNEXURE 10)

Of the production in 2003-04, 47.42 million tonnes were lumps, 73.18 million tonnes were fines and 6.13 million tonnes were concentrates. Fines and concentrates, thus, constituted over 65% of the total production. (ANNEXURE 12) Generation of fines is a natural phenomenon during the process of mining. Whereas (in 2003-04) the generation of fines for high grade ore was 44.98%, that for medium grade and low grade ore was 65.78% and 72.10% respectively. It may thus be seen that generation of fines is higher for lower grades of ore. State wise contribution of fines in total production is highest in Goa (76%) followed by Karnataka (57%). There has been an increase in generation of fines each year. Some lumps also get converted into fines in the process of handling and in the process of their conversion into calibrated lump ore for sponge iron/pig iron/exports. In addition to the generation of fines each year there are stockpiles of fines of over 30 million tonnes. (ANNEXURE 16)

In so far as grades of iron ore is concerned, during 2003-04, 45.01 million tonnes were Fe 65% plus, 58.83 million tonnes was between Fe 62-65% and 17.67 million tonnes was Fe 62% and less. (ANNEXURE 13) During 2003-04, Orissa and Karnataka accounted for 25% each of the country’s production followed by Chattisgarh, Goa and Jharkhand.

3.3.4 REQUIREMENT OF IRON ORE:

Domestic consumption of iron ore has increased from 42.04 million tonnes, in 1999-2000, to 51.62 million tonnes in 2003-04. Provisional figures for 2004-05 put the domestic consumption of iron ore at over 54 million tonnes. In contrast iron ore production increased from 74.95 million tonnes, in 1999-2000, to 145 million tonnes in 2004-05. (ANNEXURE 14).
DOMESTIC CONSUMPTION:

Out of the total domestic consumption of 51.62 million tonnes in 2003-04, 20 million tonnes were consumed by SAIL and 6 million tonnes by TISCO from their captive mines. Vizag Steel Plant (RINL) consumed 6.6 million tonnes from NMDC and IISCO mines. JSPL and JVSL had their own captive mines. ESSAR, Vikram Ispat, Ispat industries and JVSL sourced 6.78 million tonnes of ore from NMDC under long-term contracts. The balance 12 million tonnes of ore-mainly lumps- are bought by pig iron and sponge iron ore units, at spot prices, from the open market. Most of these supplies come from private mine owners and some supplies are sourced from companies in the state sector such as OMC, OMDC, NMDC and MML.

As regards future domestic demand, the Working Group on Mineral Exploration and Development for the 10th Five Year Plan has estimated crude steel production to be 65.15 million tonnes by 2011-12. Accordingly the domestic requirement of iron ore has been worked out at 113.37 million tonnes. In the draft National Steel Policy production of steel is estimated to grow to 110 million tonnes of steel by 2019-20. This will require 190 million tonnes of iron ore.

EXPORTS:

India has been a traditional exporter of iron ore in the world market. Most of the exports go to Japan, South Korea, China and other Far Eastern countries due to proximity. Export of iron ore has increased from 31.27 million tonnes in 1999-2000 to 62.58 million tonnes in 2003-04. As per provisional data for 2004-05 exports were 78.15 million tonnes during 2004-05. (ANNEXURE 14). The current export policy with regard to iron ore limits export of iron ore of 64 % plus Fe content through MMTC. However, export of iron ore of Goan origin, when exported to China, Japan, South Korea, Taiwan and Europe is freely allowed irrespective of Fe content. Likewise the following is also freely allowed:

- Iron Ore of Redi origin to all destinations irrespective of Fe content.
- All iron ore of Fe. Content upto 64 %.
In addition to the above the government has been issuing permits to mining companies for direct export of iron ore having Fe content of 64 % and above. During 2003-04 and 2004-05 permits, for direct exports of + 64% Fe grade ore, have been issued for 11.7 million tonnes and 6.88 million tonnes of ore respectively On high grade ore there are quantitative restrictions in place for Bailadila Lumps and Fines.

As regards grade wise break up of exports it is seen that exports of + 64 % Fe iron ore was 19.98 million tonnes in 2000-01 and this increased to 21.87 million tonnes in 2003-04( increase of 9.45 %). Exports of iron ore of over 62 % Fe but below 64 % Fe was 2.72 million tonnes in 2000-01 and this rose to 15.61 million tonnes in 2003-04. Export of iron ore with Fe content of 62 % and less rose from 14.79 million tonnes in 2000-01 to 25 million tonnes in 2003-04. In 2003-04, 34.95 % of the ore exported was 64% plus Fe grade, 24.94 % was 62-64 % Fe grade and the balance was 62 % and below Fe grade. It is to be noted that 90 % of the exports of iron ore are in the form of fines or concentrates. Lump ore exported was 6.5 million tonnes of which 4.83 million tonnes were to Japanese Steel Mills and South Korean Steel Mills based on long term commitments made to them.(ANNEXURE 15)

It would be seen that fines and concentrates constitute 65 % of iron ore production in India. However, domestic demand for fines is low due to inadequate capacity of sintering in steel plants and for pelletisation. Facilities for sintering is available only in some of the SAIL steel plants, TISCO, RINL and Jindal Vijaynagar. Facilities for pelletisation are also limited as this involves large investments, which is outside the capacity of individual mine owners.

As noted above exports of iron ore have grown in the last 5 years and was 78.15 million tonnes in 2004-05. Growth in exports is likely to decline as investments are made within the country into beneficiation, sintering and pelletisation. By 2019-20 exports are estimated to reach 100 million tonnes.

3.3.5 STRUCTURE OF THE IRON ORE INDUSTRY

Iron ore mining is undertaken both by the public sector and private sector companies. Public Sector’s share of iron ore production has decreased from 55.17 %
to 48% in 2003-04 and that of the private sector has correspondingly increased. The public sector companies that own and operate mines are SAIL, NMDC, KIOCL and some state mining companies. The main private sector companies that own and operate mines are TISCO, ESSEL Mining and Industries Limited, Rungta Mines, JSPL, JSW, Sesa Goa, Dempo Mining Corporation, Salgaoncars, etc.

Mining is undertaken both by steel companies, who operate captive mines, and exclusively mining companies. SAIL, TISCO, JSPL and JSW have captive mines. NMDC, KIOCL, OMC and other state mining companies and most mining companies in the private sector are independent mining companies. The total percentage of production through captive mines has decreased from 35.8% in 1999-2000 to 27.28% in 2003-04 and the share of production from mining companies has since increased from 64.17% to 72.70% during the same period.

(ANNEXURE 17)
The report of UNCTAD, on Iron –Ore Market 2004-06, states that the Indian iron ore sector is highly fragmented and that most mines are small when compared to other mines in the world. In 2004 there were more than 200 mines in India. The larger mines are owned and operated by NMDC, SAIL, KIOCL, TISCO and some state mining corporations. The number of mines in operation has always been much less than the number of leases granted/executed indicating the existence of large-scale idle leases. In 2003-04, out of the 601 leases granted, only 247 mines were in operation. It has been held that the idle leases are under various stages of renewal.

3.3.6  GRANT AND OPERATION OF LEASES-REGULATORY FRAMEWORK AND PROCESS

The policy and regulatory framework for the grant and operation of leases is provided by the following:

- The National Mineral Policy 1993(revised from time to time).
- The MMDR Act 1957.
- The MC Rules.
- State level mineral policies and guidelines.
- The Environmental Protection Act and rules and procedures there under.
- The Forest Conservation Act, rules and procedures there under.
This policy and regulatory framework aims at achieving sustainable development of the country’s mineral resources to meet both the present and long terms needs of the country. These seek to balance the objectives of development with conservation, environmental protection, safety, health and development of the mineral bearing regions.

Broadly for starting iron ore mining activities the following clearances are required from different agencies:

- Approval and grant of Mining Lease (ML).
- Forest Clearance.
- Environment clearance.

An outline of the procedures relating to grant and renewal of clearances is given in the chart at ANNEXURE 18. Several drawbacks, as listed below, are evident in the present approval framework:

- Three separate applications are required to be submitted for clearances. Central government grants forest and environmental clearances based on recommendations made by the state Government. For iron ore mining leases are approved by the Central Government on the recommendation of the State Government.
- About ten agencies are involved in the process of granting clearances. The applicant has to follow-up the proposal with all the agencies involved. This leads to delays.
- Though the time frame for grant of a mining lease is 12 months and for grant of FC is 7 months these time lines are seldom achieved. For approval of mining plans only one agency i.e IBM is designated and this takes 6-8 months. Likewise long delays take place in identifying non-forest land for compensatory afforestation enumeration of trees and completion of cost-benefit analysis by Forest departments.
- Conditions for grant of ML are not fixed and are often subject to individual assessment. Further the technical expertise and financial capabilities of the applicants are often not given required weightage.
The following suggestions with regard to procedure for grant of ML and other clearances are annexed to this chapter:

- Note by Ministry of Mines to the Standing Committee on Regulatory Reforms. (ANNEXURE 19)
- Comparative study by SAIL of procedures for grant of ML in various countries and their suggestions on streamlining procedures. (ANNEXURE 20)
- Suggestions for streamlining procedures made by various members of the Expert Group. (ANNEXURE 21).

3.3.7: ISSUES AND INITIATIVES:

With regard to augmenting iron ore availability to meet the requirement of 290 million tonnes of ore by 2019-20 the draft national steel policy outlines certain broad policy measures are envisaged. These are:

- Policy of captive mining leases should continue but for idle mining leases investment plans must be put in place.
- State Governments would recommend renewal of leases only against creditable mining investment plans in a specified period.
- Government will lay down priorities and guidelines for the state government’s to recommend fresh mining leases.
- Environmental and forest clearances should be granted within a pre-specified time.
- Though local value addition should be given priority trading in iron ore should also be encouraged to make iron ore available throughout the country.
- Government will encourage investments in adding value to iron ore fines.
- Scientific mining and economies in scale should be encouraged by prescribing a minimum economic size for mines and by encouraging consortia of small users.
- Exports of high-grade ore to be leveraged for imports of coking coal or for investment in India.
- A judicious balance to be maintained between exports and domestic supply of iron ore.
Per capita Indian iron ore reserves are around 10 tonnes against Brazilian reserves of 120 tonnes and Australian reserves of over 900 per capita tonnes.

At the other end, Indian per capita consumption of steel is currently around 31 kg. against Australian consumption of 400 kg. and world average of 150 kg.

Even the crude steel production of 110 MTPA by 2019-20 projected in the draft National Steel Policy would equate with a per capita consumption of only 80-90 kg.

Source: IISI and USGS
After showing some increase between 1978-1982, world iron ore long term contract prices (in USD terms) have remained generally stagnant between 1982-2002.

In constant terms, actual realization by producers have declined continuously till 2002 (Also see Plate XI).

Prices for Indian iron ore (other than Bailadila) have generally been lower than Australian prices under long term contracts with Japanese Steel Mills.

Producers have been able to negotiate significant increase in 2003, 2004 and 2005; mainly due to China factor.

In the event of announced additional capacities of over 200 million tonnes materializing by 2007, recent price gains under long term contract may not be sustained. Indian spot prices have already slumped from a peak of US $ 80 FOB in early 2005 to a current level of US $ 40 FOB in July 2005.

Source: TEX Report
World iron ore prices for the last 3 decades have been range-bound/stagnant at $20 - 30 per tonne in nominal terms. In real terms, realization has been decreasing.

Compared to the Index of US wholesale prices, prices of gold, lumber etc. iron ore realizations have declined steeply.

Last 3 years have seen a sharp spike in spot iron ore prices due to extraordinary increase in demand from China. It is an open question as to how much of this increase will be sustainable?

The historical trend of global steel (HR band/ coil) prices displays periodic cycles of high and low prices with multiple peaks and troughs, linked to world shortage and glut situations.

Source: World Steel Dynamics #30
The prescriptions for iron ore should, thus, be aligned with the above stated broad policy formulation.

3.4. CONCLUSION

3.4.1 As noted earlier in 3.3, Indian recoverable reserves of Hametite ore (as on 1.1.04) of all grades above 60% Fe were estimated by IBM at 9.9 billion tonnes, of which high grade (above 64% Fe) is around one billion tonne. The net reserves, according to IBM, declined due to mine production on the one hand and accretion by additional proving operations on the other hand. During the decade from 01.04.90 to 01.04.2000, there was an over all increase in reserves by 877 million tonnes but a decline of 137 million tonnes in high grade reserves, above 65% Fe. IBM has not furnished figures updated for 01.04.05. The level of annual iron ore exports since 2000 has increased greatly from around 40 mtpa to 79 mtpa in 2004. The bulk of exports were of high grade. If continued at this level, the entire known reserves of high grade iron ore would be exhausted in less than 20 years. The abnormal increase in exports for the last 5 years is mainly on account of huge upsurge in spot demand from China, with FOB prices more than doubling from $35/tonne in 2002 to over $80/tonne in 2004. Prices have since cooled to around US $50.

3.4.2. This demand pull from China has impacted the global iron ore prices and has led to quantum jump of 70% even under long term contracts. The prospect of continuing strong demand from China, and expanding steel industry in Asia, including India, has encouraged international mining companies to announce large new mining projects, particularly in Australia & Brazil with an aggregate additional capacity of over 200 million tonnes to materialize by 2007. In the event of such huge additional iron ore production actually materializing, world prices reportedly will tend to float downwards and re-stabilize, though at levels significantly higher than the past.

3.4.3 Global iron ore prices under long term contracts have remained generally stagnant for the last 2 decades. The medium f.o.b. realization of iron ore for
Indian exports for traditional grades ranged around 20 – 25 $ per tonne. Significant increases have been negotiated by MMTC/NMDC only very recently along with similar price increases negotiated by other countries in the last couple of years due to sharp increase in demand from China. (See Graphic – 7)

3.4.4. While China has two and half times India’s reserves even in terms of iron content, yet it currently imports over 200 million tonne per annum of iron ore; including substantial quantity of high grade ore from India for upgrading its own low grade iron ore. Inspite of such huge reserves, the new steel policy of China emphasizes a two-pronged strategy of investing in overseas mining resources while concurrently, restricting export of even semi-finished steel like pig iron, billets and also restricting export of other primary products, like coke etc. The policy also encourages involvement of large scale steel mills in iron ore exploration and mining.

3.4.5. In relation to size of population, Indian iron ore reserves are by no means excessive. Indian per capita iron ore reserve is only 10 tonnes as compared to Brazil 120 tonnes & Australian reserves of over 900 tonnes. Indian per capita steel consumption, on the other hand, is only 31 kg. as compared to Brazilian per capita consumption of 80 kg. and that of Australia 400 kg.

3.4.6. Since 1970’s iron ore exports have been an important plank of India’s export policy. Japanese steel industry operating through a M.I.T.I.E. cartel of trading houses e.g. Mitsui, Marubeni etc. secured raw material through a system of long term overseas ore and coal contracts linked to financial involvement in order to ensure raw material security for the expanding Japanese steel industry. Linked to Japanese financial assistance a slew or integrated iron ore export projects for expansion of mining and transport infrastructure to service Japanese long term contracts were implemented under the aegis of the Iron Ore Export Project Committee monitored at high levels. These include inter alia, the integrated Bailadilla mine – DBK railway line – Vizag Outer Harbour; Madras Outer Harbour, Murnugao Outer Harbour and Paradip port iron ore facility. These projects enabled sustained iron ore exports between 35 - 40
mtpa since late 1970’s. In comparison, Australian & Brazilian exports were each in the range of 80-100 mtpa rising to 160 mtpa each by 2000. Since 2002, Indian exports have surged to 79 million tonnes in 2004-05 and Australian & Brazilian exports have gone up to 200 million tonnes each. India has been a peripheral player in world iron ore trade with little pricing power because of abundance of availability of iron ore from other countries like Australia, Brazil, South Africa etc. This is position is not likely to change.

3.4.7. Cumulative exports of some 1 billion tonne of iron ore (mostly high grade) from India in the last 3 decades have earned perhaps around $ 30 billion in all. Iron ore exports were an important component of the fragile and generally adverse balance of trade though these decades. The dynamics of both Indian balance of trade and balance of payments, however, have changed dramatically during the last decade. With 15% of the world’s population, India’s share in world trade is currently around 0.8%, against some 2.0%, a half century ago. With our growing strengths, a strategic though gradual shift from exporter of raw material like iron ore to value added manufacturers is now both feasible and imperative.

3.4.8. With the recent upturn in world steel prices and revival and financial strengthening of the Indian steel sector, a number of new and expansion projects both in public and private sector are taking shape on the ground. With clear indication of a healthy GDP growth and increase in steel consumption, the additional steel capacity will cater both to expanding domestic consumption as well as sustained exports, provided quality and price is globally competitive. For ensuring such an edge to Indian steel industry in both exports and against imports, it is essential to leverage our national advantage in the availability of good reserves of quality iron ore for expansion of the steel industry, with its large economic multiplier, rather than continued emphasis on exports of iron ore. It is necessary also to encourage and involve larger integrated steel plants, with their strong material and technological resources, to safeguard their raw material security through world class mining operations based on scientific mining, total utilization of
mined products, beneficiation of low grades, best of class environmental practices etc.

3.4.9. While the iron ore requirements of large integrated steel plants complex can be best met through large captive mines, provision has to be made also to ensure availability of right quality of natural ore and agglomerates for the second level of mini blast furnaces, sponge iron plants, hybrid combination plants, and electric furnaces; each of which have specific and important niche roles e.g. customized steel products feeding local markets, areas with inadequate water and fragile ecology unsuitable for the heavy load of large integrated steel plants. Additionally, these plants also disperse employment and help to spread industrial and manufacturing and entrepreneurial culture in rural areas.

3.4.10. Although resources of high grade ore do need to be urgently conserved; There is no reason at present for excessive or sudden curbs on iron ore exports. Large mining, infrastructure and port capacities created for iron ore exports must not be rendered idle overnight. This would amount to unjustifiable wastage of costly national assets. An optimum and dynamic matrix of diminishing exports inversely synchronized with expanding steel production and consumption needs to be implemented over a reasonably long periods of say 10 years. In doing so, it has to be ensured that there is no avoidable disruption to mining operations and related employment and economic activity, particularly in mining sectors like Karnataka, Goa etc. where domestic demand due to locational or other reasons is much less than production of iron ore.
## World Mine Production, Reserves, and Reserve Base:

( in Million Tonnes)

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</tr>
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<td><strong>World total</strong></td>
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<td><strong>1250</strong></td>
<td><strong>160,000</strong></td>
<td><strong>370,000</strong></td>
</tr>
</tbody>
</table>

**Source:** US. Geological Survey, Mineral Commodity Summaries, January, 2005

*The iron ore reserves and reserve base estimates for Brazil have been revised based on new information from that country.

** However as reported by IBM, in its Indian Minerals year book, the total Insitu reserves of iron ore (Haematite & Magnetite) at over 18 billion tonnes.
<table>
<thead>
<tr>
<th>Country</th>
<th>Apparent Consumption</th>
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</tr>
<tr>
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<td>Netherlands</td>
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<td>Spain</td>
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<td>Sweden</td>
<td>5.6</td>
</tr>
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<td>United Kingdom</td>
<td>16.1</td>
</tr>
<tr>
<td>Other EU</td>
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<td>Poland</td>
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<td>Slovakia</td>
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<td>Venezuela</td>
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<td>Japan</td>
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<td>South Korea</td>
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<td>Other Asia</td>
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</tr>
<tr>
<td>Australia</td>
<td>28.1</td>
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<tr>
<td>New Zealand and Other Oceania</td>
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<td><strong>Oceania</strong></td>
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<td>World</td>
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### Iron Ore World Exports (Mt)

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<td><strong>Europe Excluding CIS</strong></td>
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<td>20.1</td>
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<td>129.</td>
<td>140.</td>
<td>143.</td>
<td>140.</td>
<td>160.</td>
<td>155.</td>
<td>170.</td>
<td>184.</td>
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<tr>
<td><strong>America Including Brazil</strong></td>
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<td>184.</td>
<td>199.</td>
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<td>209.</td>
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<td>220.</td>
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<td>35.7</td>
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<td>31.7</td>
<td>32.9</td>
<td>32.8</td>
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<td>41.0</td>
<td>54.9</td>
<td>57.3</td>
<td>62.7</td>
<td>9.3</td>
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<td>32.2</td>
<td>34.4</td>
<td>34.2</td>
<td>32.5</td>
<td>34.3</td>
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<td>57.1</td>
<td>59.4</td>
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<td>155.</td>
<td>144.</td>
<td>146.</td>
<td>165.</td>
<td>164.</td>
<td>175.</td>
<td>187.</td>
<td>210.7</td>
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<td><strong>Oceania Including Australia</strong></td>
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<td>136.</td>
<td>156.</td>
<td>146.</td>
<td>147.</td>
<td>166.</td>
<td>165.</td>
<td>176.</td>
<td>188.</td>
<td>211.7</td>
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<tr>
<td><strong>Total World</strong></td>
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<td>432.</td>
<td>473.</td>
<td>466.</td>
<td>446.</td>
<td>503.</td>
<td>496.</td>
<td>545.</td>
<td>584.</td>
<td>633.5</td>
<td>8.3</td>
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<tr>
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<td>------</td>
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<td>------</td>
<td>------</td>
<td>------</td>
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<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>----------------</td>
</tr>
<tr>
<td>Europe excl. CIS</td>
<td>178.7</td>
<td>164.1</td>
<td>173.4</td>
<td>174.2</td>
<td>152.9</td>
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<td>146.0</td>
<td>155.7</td>
<td>154.9</td>
<td>169.3</td>
<td>9.4</td>
</tr>
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<td>--</td>
<td>--</td>
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<td>7.3</td>
<td>16.5</td>
<td>15.2</td>
<td>13.7</td>
<td>17.7</td>
<td>13.7</td>
<td>-23</td>
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<td>2.7</td>
<td>3.2</td>
<td>4.1</td>
<td>3.8</td>
<td>5.5</td>
<td>4.8</td>
<td>5.2</td>
<td>6.3</td>
<td>6.7</td>
<td>6.1</td>
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<td>Japan</td>
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<td>120.7</td>
<td>127.6</td>
<td>118.6</td>
<td>123.0</td>
<td>131.5</td>
<td>125.3</td>
<td>131.8</td>
<td>132.4</td>
<td>134.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Korea</td>
<td>35.1</td>
<td>34.8</td>
<td>38.6</td>
<td>33.6</td>
<td>35.5</td>
<td>39.0</td>
<td>45.9</td>
<td>43.3</td>
<td>43.1</td>
<td>44.2</td>
<td>2.7</td>
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<tr>
<td>Asia excl. China</td>
<td>183.5</td>
<td>185.311</td>
<td>200.3</td>
<td>183.1</td>
<td>188.9</td>
<td>205.8</td>
<td>203.8</td>
<td>213.3</td>
<td>214.1</td>
<td>218.7</td>
<td>2.2</td>
</tr>
<tr>
<td>China</td>
<td>41.2</td>
<td>43.9</td>
<td>55.1</td>
<td>51.8</td>
<td>55.3</td>
<td>70.0</td>
<td>92.3</td>
<td>111.5</td>
<td>148.1</td>
<td>208.1</td>
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<tr>
<td>Total World</td>
<td>438.0</td>
<td>430.4</td>
<td>469.9</td>
<td>457.1</td>
<td>441.4</td>
<td>500.7</td>
<td>491.0</td>
<td>531.8</td>
<td>575.0</td>
<td>659.9</td>
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</tbody>
</table>
INDIAN IRON ORE INSITU RESERVES

The following tables sums up the insitu reserve of Indian Iron Ore:

<table>
<thead>
<tr>
<th>IN SITU RESERVES OF INDIAN IRON ORE</th>
<th>Quantity in Million tonnes as on 1.04.2000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Proven</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Haematite</td>
<td>6800.4</td>
</tr>
<tr>
<td>Magnetite</td>
<td>1769.9</td>
</tr>
<tr>
<td>Total</td>
<td>8570.3</td>
</tr>
</tbody>
</table>

Source: Indian Bureau of Mines, Nagpur.

**Proved:** Iron ore deposits have been proved by way of pitting, drenching & drilling. Metallurgical & ore dressing test by drawing bulk sample is also done. Thereafter we get to know the surface limit and bottom of the pit-upto which iron ore can be mined.

**Possible:** Limited amount of exploratory work has been done where boundaries of the deposit cannot be fixed. Additional work is required to convert possible category to proved category.

**Probable:** No exploration work has been done or if at all, it has been done on wider exploration grid.

**Insitu Reserves**—Geological reserve, from which recovery percentage has not been calculated. It is different from recoverable reserve.

**Recoverable Reserve:** It is mineable reserve. After calculating mining losses, approximately 80% of in situ reserve is recoverable reserve.
# HAEMATITE AND MAGNETITE RESERVES - STATEWISE DISTRIBUTION

## LOCATION OF INDIAN IRON ORE RESERVES:

### HAEMATITE

<table>
<thead>
<tr>
<th>Location</th>
<th>Proven</th>
<th>Probable</th>
<th>Possible</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orissa</td>
<td>1824.1</td>
<td>762.9</td>
<td>1590.2</td>
<td>4177.3</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>2560.2</td>
<td>334.8</td>
<td>386.0</td>
<td>3281.0</td>
</tr>
<tr>
<td>Chattisgarh</td>
<td>993.1</td>
<td>537.5</td>
<td>747.5</td>
<td>2278.2</td>
</tr>
<tr>
<td>Karnataka</td>
<td>795.7</td>
<td>208.7</td>
<td>311.2</td>
<td>1315.6</td>
</tr>
<tr>
<td>Goa</td>
<td>461.0</td>
<td>149.3</td>
<td>119.4</td>
<td>729.7</td>
</tr>
<tr>
<td>Redi</td>
<td>106.9</td>
<td>76.9</td>
<td>89.2</td>
<td>273.0</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>2.0</td>
<td>12.7</td>
<td>5.6</td>
<td>20.3</td>
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</table>

### MAGNETITE

<table>
<thead>
<tr>
<th>Location</th>
<th>Proven</th>
<th>Probable</th>
<th>Possible</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karnataka</td>
<td>1653.4</td>
<td>503.9</td>
<td>1686.6</td>
<td>3843.95</td>
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<tr>
<td>AP</td>
<td>43.0</td>
<td>1266.7</td>
<td>-</td>
<td>1309.70</td>
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<tr>
<td>Goa</td>
<td>67.3</td>
<td>5.4</td>
<td>115.2</td>
<td>187.99</td>
</tr>
<tr>
<td>Kerala</td>
<td>-</td>
<td>26.9</td>
<td>12.3</td>
<td>39.2</td>
</tr>
<tr>
<td>Others</td>
<td>6.1</td>
<td>4.0</td>
<td>4.3</td>
<td>14.38</td>
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<tr>
<td>Total</td>
<td>1769.9</td>
<td>1806.9</td>
<td>1818.4</td>
<td>5395.20</td>
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</table>

### GRADEWISE/STATEWISE RECOVERABLE RESERVES OF HAEMATITE AS ON 1.4.2000 (in million tonnes)

<table>
<thead>
<tr>
<th>State</th>
<th>High Grade Ore (Fe+65%)</th>
<th>Medium Grade Ore (Fe 62-65%)</th>
<th>Low Grade Ore (Fe below 62%)</th>
<th>Unclassified/others/Blue Dust Black</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jharkhand</td>
<td>44.04</td>
<td>1754.06</td>
<td>873.09</td>
<td>188.07</td>
<td>2859.26</td>
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<tr>
<td>Orissa</td>
<td>547.64</td>
<td>1857.33</td>
<td>507.54</td>
<td>291.4</td>
<td>3203.91</td>
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<td>Chattisgarh</td>
<td>461.24</td>
<td>562.06</td>
<td>463.17</td>
<td>416.59</td>
<td>1903.06</td>
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<td>Karnataka</td>
<td>214.86</td>
<td>583.01</td>
<td>78.59</td>
<td>89.84</td>
<td>966.30</td>
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<td>Goa Region</td>
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<td>132.75</td>
<td>392.38</td>
<td>55.71</td>
<td>580.86</td>
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<td>Others</td>
<td>30.47</td>
<td>134.13</td>
<td>146.22</td>
<td>104.33</td>
<td>405.63</td>
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<tr>
<td>Grand Total</td>
<td>1298.27</td>
<td>5023.34</td>
<td>2460.99</td>
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<td>9919.02</td>
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</table>

Source: IBM, Nagpur

### GRADEWISE*/STATEWISE RECOVERABLE RESERVES OF MAGNETITE AS ON 1.4.2000 (In million tonnes)

<table>
<thead>
<tr>
<th>State</th>
<th>Metallurgical Grade</th>
<th>Coal washery grade</th>
<th>Foundry</th>
<th>Unclassified</th>
<th>Others/not known</th>
<th>Total</th>
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<td>-</td>
<td>380</td>
<td>-</td>
<td>417.87</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.54</td>
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<td>Goa</td>
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<td>-</td>
<td>-</td>
<td>64.69</td>
<td>3.28</td>
<td>166.3</td>
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<td>-</td>
<td>5.09</td>
<td>-</td>
<td>0.11</td>
<td>0.06</td>
<td>5.26</td>
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<tr>
<td>Karnataka</td>
<td>1265.32</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>36.09</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>0.19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.19</td>
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<tr>
<td>Rajasthan</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.08</td>
<td>-</td>
<td>0.38</td>
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<tr>
<td>Tamil Nadu</td>
<td>1.08</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.08</td>
</tr>
<tr>
<td>Total</td>
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<td>5.09</td>
<td>0.3</td>
<td>2060.64</td>
<td>8.74</td>
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Source: IBM, Nagpur

(Units: Million Tonnes)

<table>
<thead>
<tr>
<th>Grades</th>
<th>Recoverable Reserves as on 01.04.1990</th>
<th>Recoverable Reserves as on 01.04.2000</th>
<th>Increase or Decrease as on 01.04.2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>All India</td>
<td>9602</td>
<td>9919</td>
<td>Increase of 317 million tonnes</td>
</tr>
<tr>
<td>High Grade</td>
<td>1099</td>
<td>963</td>
<td>Decrease of 136 million tonnes</td>
</tr>
<tr>
<td>Medium grade</td>
<td>4050</td>
<td>4634</td>
<td>Increase of 584 million tonnes</td>
</tr>
<tr>
<td>Low grade</td>
<td>2638</td>
<td>2222</td>
<td>Decrease of 416 million tonnes</td>
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<td>Others (unclassified, blue dust, black iron not known)</td>
<td>1815</td>
<td>2100</td>
<td>Increase of 285 million tonnes</td>
</tr>
</tbody>
</table>

Source: IBM

- Between 1990 and 2000 there has been a net addition of 877 million tonnes of iron ore after mining 653 million tonnes of iron ore.
- The high grade reserves of iron ore have decreased by 136 million tonnes in the same period.

- Haematite and Magnetite are the most important iron ores in India. About 60% of the haematite ore is concentrated in the Eastern Sector and about 80% magnetite ore in Southern Sector, especially in Karnataka. Haematite ore is considered to be superior ore owing to its high grade. Magnetite has lesser Fe content.
While haematite resource are mostly confined to States of Jharkhand, Orissa, Chattisgarh, Karnataka & Goa, the bulk of magnetite ore is available in Karnataka State and to some extent in Andhra Pradesh and Goa.

Haematite ore represents 75% of the total iron ore resources. More than 50% of haematite ore is of medium to high grade having Fe content 62% and above.

Deposits of high grade having Fe content above 65% are limited. Grade wise share of Haematite is as below:
GRADE WISE SHARE OF RESERVES

<table>
<thead>
<tr>
<th>Grade</th>
<th>Approx. % Share in Recoverable reserve(2000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Grade</td>
<td>Fe:&gt;65</td>
</tr>
<tr>
<td>Medium Grade</td>
<td>Fe:62-65</td>
</tr>
<tr>
<td>Low Grade</td>
<td>Fe: &lt;62</td>
</tr>
<tr>
<td>Unclassified</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>High Grade</td>
<td>9.70</td>
</tr>
<tr>
<td>Medium Grade</td>
<td>46.71</td>
</tr>
<tr>
<td>Low Grade</td>
<td>22.40</td>
</tr>
<tr>
<td>Unclassified</td>
<td>21.17</td>
</tr>
</tbody>
</table>
## STATEWISE PRODUCTION OF IRON ORE

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chhatisgarh</td>
<td>19.30</td>
<td>20.00</td>
<td>18.66</td>
<td>19.78</td>
<td>22.67</td>
<td>NA</td>
</tr>
<tr>
<td>Goa</td>
<td>15.41</td>
<td>14.56</td>
<td>14.78</td>
<td>17.88</td>
<td>20.15</td>
<td>NA</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>11.92</td>
<td>12.40</td>
<td>13.06</td>
<td>13.70</td>
<td>14.48</td>
<td>NA</td>
</tr>
<tr>
<td>Karnataka</td>
<td>15.87</td>
<td>18.90</td>
<td></td>
<td></td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>Orissa</td>
<td>11.93</td>
<td>14.38</td>
<td>16.60</td>
<td>22.07</td>
<td>30.17</td>
<td>NA</td>
</tr>
<tr>
<td>Others</td>
<td>4.89</td>
<td>4.95</td>
<td>5.17</td>
<td>8.26</td>
<td>15.44</td>
<td>NA</td>
</tr>
<tr>
<td>All India Total</td>
<td>74.94</td>
<td>80.76</td>
<td>86.22</td>
<td>99.07</td>
<td>120.60</td>
<td>145</td>
</tr>
</tbody>
</table>

**SOURCE:** Indian Bureau of Mines, Nagpur

- The entire increase in production of iron ore in 2002-03, 2003-04 and 2004-05 was export driven and came from existing mines. No green field project has been opened in the last more than two decades according to FIMI.
- Region wise two regions which produce iron ore are (a) Central and Eastern India consisting of Chhattisgarh, Jharkhand and Orissa & (b) South Western India comprising Karnataka and Goa.
- Region (a) produced 55.56 million tonnes (56.08% of total production) and 67.34 million tonnes (55.84% of total production) in 2002-03 and 2003-04 respectively.
- Region (b) contributed 42.68 million tonnes (43.08% of total production), & 51.71 million tonnes (42.87% of total production) in 2002-03 and 2003-04 respectively.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lumps</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65% Fe &amp; above</td>
<td>15.39</td>
<td>16.32</td>
<td>19.70</td>
<td>22.33</td>
<td>24.76</td>
</tr>
<tr>
<td>62-65%</td>
<td>10.39</td>
<td>11.31</td>
<td>9.53</td>
<td>11.91</td>
<td>17.72</td>
</tr>
<tr>
<td>60.62%</td>
<td>3.34</td>
<td>4.07</td>
<td>3.02</td>
<td>3.23</td>
<td>2.17</td>
</tr>
<tr>
<td>Below 60%</td>
<td>2.97</td>
<td>1.87</td>
<td>2.33</td>
<td>2.11</td>
<td>2.76</td>
</tr>
<tr>
<td><strong>Lumps (Total)</strong></td>
<td><strong>32.09</strong></td>
<td><strong>33.57</strong></td>
<td><strong>34.57</strong></td>
<td><strong>39.58</strong></td>
<td><strong>47.42</strong></td>
</tr>
<tr>
<td><strong>Fines</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65% Fe &amp; above</td>
<td>12.56</td>
<td>14.84</td>
<td>15.90</td>
<td>18.84</td>
<td>20.25</td>
</tr>
<tr>
<td>62-65%</td>
<td>15.41</td>
<td>19.26</td>
<td>20.06</td>
<td>23.96</td>
<td>34.07</td>
</tr>
<tr>
<td>Below 62%</td>
<td>8.15</td>
<td>7.08</td>
<td>9.20</td>
<td>10.19</td>
<td>12.74</td>
</tr>
<tr>
<td><strong>Fines (Total)</strong></td>
<td><strong>36.14</strong></td>
<td><strong>41.19</strong></td>
<td><strong>45.22</strong></td>
<td><strong>52.99</strong></td>
<td><strong>73.18</strong></td>
</tr>
<tr>
<td><strong>Concentrates (Total)</strong></td>
<td><strong>6.72</strong></td>
<td><strong>6.00</strong></td>
<td><strong>6.43</strong></td>
<td><strong>6.50</strong></td>
<td><strong>6.13</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>74.95</strong></td>
<td><strong>80.76</strong></td>
<td><strong>86.23</strong></td>
<td><strong>99.07</strong></td>
<td><strong>120.60</strong></td>
</tr>
</tbody>
</table>

- For 2004-05, gradewise figures are still being compiled by IBM. Total production of iron ore in 2004-05 was 145 million tonnes.
## STATEWISE: PRODUCTION RATIO OF LUMPS, FINES AND CONCENTRATES

**Quantity: Million tonnes**

<table>
<thead>
<tr>
<th></th>
<th>Lumps</th>
<th>Fines</th>
<th>Conc</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chhatisgarh</td>
<td>10.12</td>
<td>12.55</td>
<td>Not produced</td>
<td>22.67</td>
</tr>
<tr>
<td>Goa</td>
<td>3.89</td>
<td>15.22</td>
<td>1.03</td>
<td>20.15</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>6.39</td>
<td>8.09</td>
<td>Not produced</td>
<td>14.48</td>
</tr>
<tr>
<td>Karnataka</td>
<td>8.41</td>
<td>18.05</td>
<td>5.09</td>
<td>31.56</td>
</tr>
<tr>
<td>Orissa</td>
<td>18.22</td>
<td>11.95</td>
<td>Not produced</td>
<td>30.17</td>
</tr>
<tr>
<td>Others</td>
<td>3.71</td>
<td>11.73</td>
<td>Not produced</td>
<td>15.44</td>
</tr>
<tr>
<td>INDIA</td>
<td>47.42</td>
<td>67.05</td>
<td>6.12</td>
<td>120.60</td>
</tr>
</tbody>
</table>

Source: IBM

- 60% of production in 2002-03 and 61% in 2003-04 came in the form of fines (including concentrates), during the course of mining operations itself.
- In Goa the contribution of fines to total production was as much as 60%, followed by Karnataka 57%, Jharkhand 56%, Chhatisgarh 55% and Orissa 39%.
- Intensive and deep mining results in more generation of fines.
## ANNEXURE-13

### GRADE-WISE PRODUCTION OF IRON ORE (LUMPS, FINES AND CONCENTRATES)

Unit: in million tonnes

<table>
<thead>
<tr>
<th>GRADES</th>
<th>Lumps</th>
<th>Fines</th>
<th>Total</th>
<th>% of fines in total fines</th>
<th>% of fines in all India Total</th>
<th>% of fines in various grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>+65%</td>
<td>24.76</td>
<td>20.24</td>
<td>45.01</td>
<td>27.67</td>
<td>16.79</td>
<td>44.98</td>
</tr>
<tr>
<td>62-65%</td>
<td>17.72</td>
<td>34.07</td>
<td>51.79</td>
<td>46.56</td>
<td>28.25</td>
<td>65.78</td>
</tr>
<tr>
<td>-62%</td>
<td>4.9</td>
<td>12.73</td>
<td>17.66</td>
<td>17.40</td>
<td>10.56</td>
<td>72.10</td>
</tr>
<tr>
<td>Conct.</td>
<td>6.12</td>
<td>6.12</td>
<td>12.66</td>
<td>8.37</td>
<td>5.08</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>47.42</td>
<td>73.18</td>
<td>120.60</td>
<td>100.00</td>
<td>61</td>
<td>61.00</td>
</tr>
</tbody>
</table>

Source: IBM

- In terms of total quantity of fines at All India level, the maximum fines are generated in Grade 62 to 65% Fe: It was about 47% in 02-03 but increased to more than 46% in 03-04.
- The percentage of fines is increasing year after year in other grades as well.
- Ratio of generation of fines is maximum in -62 Fe grade followed by 62 - 65% and +65% Fe grade.
### PRODUCTION/CONSUMPTION OF IRON ORE

*(figures in Million Tonnes:-MT)*

(1991-92 TO 2004-05)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (MT)</th>
<th>Export (MT)</th>
<th>Domestic Consumption (MT)</th>
<th>% Production Exported</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991-92</td>
<td>57.46</td>
<td>30.37</td>
<td>25.92</td>
<td>54.90</td>
</tr>
<tr>
<td>1992-93</td>
<td>58.12</td>
<td>27.86</td>
<td>29.60</td>
<td>49.02</td>
</tr>
<tr>
<td>1993-94</td>
<td>58.67</td>
<td>31.94</td>
<td>27.17</td>
<td>53.67</td>
</tr>
<tr>
<td>1994-95</td>
<td>64.50</td>
<td>28.00</td>
<td>36.50</td>
<td>43.41</td>
</tr>
<tr>
<td>1995-96</td>
<td>66.58</td>
<td>31.34</td>
<td>35.24</td>
<td>47.07</td>
</tr>
<tr>
<td>1996-97</td>
<td>66.60</td>
<td>31.70</td>
<td>34.90</td>
<td>47.59</td>
</tr>
<tr>
<td>1997-98</td>
<td>75.72</td>
<td>35.61</td>
<td>40.11</td>
<td>43.03</td>
</tr>
<tr>
<td>1998-99</td>
<td>70.68</td>
<td>31.68</td>
<td>39.41</td>
<td>44.24</td>
</tr>
<tr>
<td>1999-00</td>
<td>74.95</td>
<td>32.91</td>
<td>42.04</td>
<td>43.91</td>
</tr>
<tr>
<td>2000-01</td>
<td>80.76</td>
<td>37.49</td>
<td>41.73</td>
<td>46.42</td>
</tr>
<tr>
<td>2001-02</td>
<td>86.22</td>
<td>41.64</td>
<td>41.36</td>
<td>48.29</td>
</tr>
<tr>
<td>2002-03</td>
<td>99.07</td>
<td>48.02</td>
<td>49.98</td>
<td>48.47</td>
</tr>
<tr>
<td>2003-04</td>
<td>120.60</td>
<td>62.58</td>
<td>51.62</td>
<td>51.89</td>
</tr>
<tr>
<td>2004-05</td>
<td>145.00</td>
<td>78.15</td>
<td>*</td>
<td>53.89</td>
</tr>
</tbody>
</table>

Source: IBM for Domestic Consumption & MMTC for exports.

- Export of Iron ore from India has ranged between 43.41% to 53.89% between 1991-92 to 2004-05.
- In 2003-04, India’s iron ore production was 10.71% of total world production (1120 million tonnes). World Sea borne trade in 2003-04 was of 560 million tonnes of iron ore, with India’s contribution being 62 million tonnes (i.e. 11.07% of total world exports of iron ore came from India)

* Desired domestic consumption based on crude steel production will be over 54 million tonnes.
Gradewise export of iron ore from India (excluding concentrate & pellets)

<table>
<thead>
<tr>
<th>Year</th>
<th>High Grade (Fe+65%)</th>
<th>Medium Grade (Fe+62-65%)</th>
<th>Low Grade (Fe &lt;62%)</th>
<th>Total Export.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-91</td>
<td>10.8</td>
<td>17.63</td>
<td>3.58</td>
<td>31.95</td>
</tr>
<tr>
<td>1991-92</td>
<td>10.63</td>
<td>16.8</td>
<td>2.94</td>
<td>30.37</td>
</tr>
<tr>
<td>1992-93</td>
<td>8.84</td>
<td>15.25</td>
<td>3.77</td>
<td>27.86</td>
</tr>
<tr>
<td>1993-94</td>
<td>10.39</td>
<td>16.71</td>
<td>4.84</td>
<td>31.94</td>
</tr>
<tr>
<td>1994-95</td>
<td>10.13</td>
<td>15.73</td>
<td>4.89</td>
<td>31.75</td>
</tr>
<tr>
<td>1999-2000</td>
<td>7.94</td>
<td>3.8</td>
<td>15.4</td>
<td>27.14</td>
</tr>
<tr>
<td>2000-01</td>
<td>8.55</td>
<td>5.77</td>
<td>17.2</td>
<td>31.52</td>
</tr>
<tr>
<td>2001-02</td>
<td>8.9</td>
<td>7.88</td>
<td>17.68</td>
<td>34.46</td>
</tr>
<tr>
<td>2002-03</td>
<td>8.75</td>
<td>9.67</td>
<td>20.58</td>
<td>39.00</td>
</tr>
<tr>
<td>2003-04</td>
<td>14.00</td>
<td></td>
<td></td>
<td>62.57</td>
</tr>
<tr>
<td>2004-05</td>
<td>4.50</td>
<td></td>
<td></td>
<td>78.14</td>
</tr>
</tbody>
</table>

Source: MMTC

Destination wise export of iron ore

<table>
<thead>
<tr>
<th>Country</th>
<th>Quantity: million tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINA</td>
<td>26.27</td>
</tr>
<tr>
<td>JAPAN</td>
<td>15.75</td>
</tr>
<tr>
<td>S.KOREA</td>
<td>2.41</td>
</tr>
<tr>
<td>TAIWAN</td>
<td>.58</td>
</tr>
<tr>
<td>EUROPE</td>
<td>2.04</td>
</tr>
<tr>
<td>OTHERS</td>
<td>.97</td>
</tr>
<tr>
<td>TOTAL</td>
<td>48.02</td>
</tr>
</tbody>
</table>

Source: MMTC

- Exports to China have increased from 30% in 1999-2000 to 54% in 2002-03; exports to China further increased to 67.20% in 2003-04 & to 76% in 2004-05.
- More than 90% of exports of iron ore from India comprise of iron-ore fines & concentrates. Iron ore fines at present do not have adequate demand in Indian Steel Sector.
- However in the draft National Steel Policy emphasis has been laid on utilization of fines by ‘Government encourages investments in adding value to iron ore fines’.
**ANNEXURE-16**

**Mine head stock of iron ore State-wise (in million tonnes)**

<table>
<thead>
<tr>
<th>State</th>
<th>2002-03*</th>
<th>2003-04*</th>
<th>2004-05**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chattisgarh</td>
<td>15.56</td>
<td>13.91</td>
<td>N.A</td>
</tr>
<tr>
<td>Goa</td>
<td>3.34</td>
<td>2.81</td>
<td>NA</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>1.08</td>
<td>1.16</td>
<td>NA</td>
</tr>
<tr>
<td>Karnataka</td>
<td>8.70</td>
<td>9.19</td>
<td>NA</td>
</tr>
<tr>
<td>Orissa</td>
<td>4.28</td>
<td>5.27</td>
<td>NA</td>
</tr>
<tr>
<td>Others</td>
<td>.16</td>
<td>.13</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>32.90</td>
<td>32.34</td>
<td>34.71</td>
</tr>
</tbody>
</table>

Source: IBM

* Revised figures  
** Figures being finalized by IBM. Total figure is provisional.

- In 2003-04, out of 32.47 million tonnes of mine head stock in the country Chattisgarh accounted for 13.91 million tonnes of mine head stock of iron ore.
- There are primarily two PSUs – NMDC and SAIL which are engaged in iron ore mining in the state.
- Out of 13.91 million tonnes of mine head stock NMDC accounted for 7.91 million tonnes of mine head stock and SAIL accounted for another 6.3 million tonnes in its mines at Dalli (2 million tonnes, Fe content 63.38%) and Rajhera (4.3 million tonnes, Fe content 61.49%).
- These stocks are of iron ore fines. These are the book value given by NMDC, SAIL in annual return to IBM.
- *This includes current generation plus the old stock dumped in valley/demarcated area.*
PUBLIC /PRIVATE SECTOR PRODUCTION OF IRON ORE

Million Tonnes

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>41.35</td>
<td>43.49</td>
<td>45.09</td>
<td>49.69</td>
<td>56.90</td>
</tr>
<tr>
<td>Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>33.58</td>
<td>37.27</td>
<td>41.12</td>
<td>49.37</td>
<td>63.69</td>
</tr>
<tr>
<td>Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Captive</td>
<td>26.85</td>
<td>28.67</td>
<td>28.03</td>
<td>29.97</td>
<td>32.91</td>
</tr>
<tr>
<td>Non-captive</td>
<td>48.09</td>
<td>52.08</td>
<td>58.19</td>
<td>69.09</td>
<td>87.68</td>
</tr>
<tr>
<td>All India Total</td>
<td>74.94</td>
<td>80.76</td>
<td>86.22</td>
<td>99.07</td>
<td>120.60</td>
</tr>
</tbody>
</table>

Source: IBM, Nagpur.

- Public Sector iron ore mines such that of NMDC, SAIL, KIOCL and State Government Undertaking accounted for more than 51% of total production.
- SAIL and NMDC together account for more than 80% of domestic iron ore production of the whole public sector.
- SAIL &NMDC together account for more than 41% of total iron ore production in India.
- Private Sector account for approximately 49% of India’s iron ore production.
- In 2003-04 this percentage of production between private and public sector went down a change with private sector accounting for 52% of total iron ore production and public sector accounting for 48% of total iron ore production in India.
- In 1999-2000, 35.8% of total iron ore was produced by captive mines (mines allotted to steel plants) & 64.17% of iron ore production was by non-captive mines (i.e. mining companies).
- By 2003-04, 27.28% of country’s iron ore production was made by captive mines & 72.70% of iron ore production was made by non-captive mines.
ANNEXURE-18

**Forest Clearance**
- Submission of application
- Recommendation by State Government
- Examination by Forest Advisory Committee of MoEF
- Stage-I clearance of MoEF with certain conditions
- Compliance of stage-I conditions by State Govt. and applicant
- Grant of Forest clearance by MoEF GOI

**Environment Clearance**
- Preparation of rapid EIA/EMP
- Public Hearing through State Pollution
- Submission of application for Envirn.Clearance to MOEF, GOI thro MOS
- Examination by Environment Advisory Committee (EAC) of MoEF, GOI
- Site inspection by EAC and suggestions, if any, by EAC
- Grant of Environmental Clearance

**Mining Lease**
- Preparation of Mining Plan
- Preparation of FR
- Approval of M.P by IBM
- Submission of application for mining lease/renewal
- Recommendation of Chief Secy. State Govt.
- Approval of Chief Minister
- Approval of Union Minister of Mines, GOI

**Grant of ML by State**
- Signing of ML agreement by State Govt.
In the federal structure of India, the State Governments are the owners of minerals located within the boundary of the State concerned: The Central Government is the owner of the minerals underlying the ocean within the territorial waters or the Exclusive Economic Zone of India.

2. The State Government grant the mineral concessions for all the minerals located within the boundary of the State, under provisions of the Mines and Minerals (Development and Regulation), Act, 1957, and Mineral Concession Rules, 1960. For minerals specified in the First Schedule to the Mines and Minerals (Development and Regulation) Act, 1957, before granting the mineral concession, approval of the Central Government is necessary.

**Powers and Jurisdiction of the Central Government under the MMDR Act, 1957.**

3. Under the provisions of MMDR Act, 1957 and rules framed there under, the Central Government:

- Notifies certain minerals as ‘minor’ minerals for which the State Governments have full powers to frame rules for regulating grant of mineral concessions and fix rates of royalty and dead rent.
- Notifies the rates of royalty and dead rent that are payable by the mineral concession holders for all minerals other than minor minerals.
- Makes rules for regulating the grant of mineral concessions for all minerals other than minor minerals.
- Makes rules for conservation and systematic development of all minerals including minor minerals.
- Explores and prospects through Geological survey of India and such other identified Central Government Departments and the Mineral Corporation of India without the necessity of obtaining prospecting license.
- Can authorize Geological Survey of India for investigation even in areas held under mineral concessions.
• Can reserve areas for conservation of any mineral, and/or for prospecting/mining by a Government Company after ‘consultation’ with the State Government concerned.
• Can revise any order made by State Government with respect to any mineral except a minor mineral.
• Can direct the State Government to impose any special condition in the mining lease.

4. MMDR Act and Mineral Concession Rules, 1960 (MCR) further provide that in the following areas, before the State Government exercises powers, approval of the Central Government shall be necessary.

• Granting mineral concessions in respect of minerals specified in the first Schedule to the Mines and Minerals (Development and Regulation) Act, 1957.
• Granting areas under prospecting license and mining lease to a person in excess of limits prescribed.
• Imposing special condition (s) in mining lease over and above the conditions prescribed in MCR, 1960.
• Terminating a prospecting license or a mining lease for any mineral other than a minor mineral prematurely under Section 4(1) of the MMDR Act, 1957.
• Granting mineral concession in an area previously reserved by the Government, or previously held under a mineral concession, without first notifying the same.

Mineral concessions.
5. There are three kinds of mineral concessions, viz. Reconnaissance Permit (RP), Prospecting License (PL) and Mining Lease (ML).

6. RP is granted for preliminary prospecting of a mineral through regional, aerial, geophysical or geochemical surveys and geological mapping. The A RP for any mineral or prescribed group of associated minerals is granted for 3 years and for a maximum area of 5,000 square kilometer, to be relinquished progressively. After 2 years, the area should be reduced to 1,000 square kilometer or 50% of the area granted, whichever is less. At the end of 3 years, area held under a RP should be reduced to 25 kilometer. In a State, a
person can be granted a maximum area of 10,000 square kilometer in 2 or more RPs. A RP holder has preferential right to obtain PL (s) in the area concerned.

7. PL is granted for undertaking operations for purpose of exploring, locating or proving mineral deposit. A PL for any mineral or prescribed group of associated minerals is granted for a maximum period of 3 years. A PL can be renewed in such a manner that the total period for which a PL is granted does not exceed 5 years. In a State, a person can be granted a maximum area of 25 square kilometer in 1 or more PLs, but if the Central Government is of the opinion that in the interest of development of any mineral it is necessary to do so, the maximum area limit can be relaxed. A PL holder has preferential right to obtain ML(s) in the area concerned.

8. ML is granted for undertaking operations for winning any mineral A ML for any mineral or prescribed group of associated minerals is granted for a minimum period of 20 years and a maximum period of 30 years. A ML can be renewed for periods not exceeding 20 years each. In a State, a person can be granted a maximum area of 10 sq. kilometer in 1 or more MLs, but if the Central Government is of the opinion that in the interest of development of any mineral it is necessary to do so, the maximum area limit can be relaxed.

The procedure for obtaining mineral concessions.

9. It is for the person concerned to apply for any of the three recognized mineral concessions, either of his own volition or in response to a State Government notification seeking applications.

10. The application for mineral concession needs to be made to the State Government concerned in the format prescribed along with prescribed fees, and other documents. The State Government is enjoined to process the application in a time bound manner, following the principle of other things being equal, the principle of ‘first come first serve’ and convey the decision. The law also provides that an opportunity of being heard shall be provided to a person before rejecting any application. Further, a person, who has explored/surveyed/prospected an area either under a RP or under a PL for the mineral(s) would have the overriding first right for obtaining the PI or the mining lease, respectively.
11. As per Mineral Concession Rules, 1960, the State Government should convey the decision on a mineral concession applied for as follows:

- Reconnaissance Permits: 6 months
- Prospecting License: 9 months
- Mining Lease: 12 months.

In case of delay, the State Governments are required to indicate the reasons for the delay in writing.

**Need for a Committee approach for clearing proposals in the mining sector.**

(a) For conveying State Government approval.

12. At present MCR, 1960 provides that the State Government can follow its own procedures for receipt of applications for mineral concessions. In most cases these applications are received in the office of the District collector. While such a system has an advantage of quicker consideration in such cases where the entire area applied for lies in a single district, many a time’s more than one district may be involved which time is consuming for completing the paperwork. Further every application is examined first at the district collector level and then at the Office of the Directorate of Mining and Geology. The proposal is then considered in the State Government Secretariat and a letter of intent is issued only after the Minister concerned approves the individual application on file.

13. Since basic information required for every application for processing the application is available at the district level, including royalty clearance, availability of the area etc. particularly from the forest angle, until and unless such information is complete, the application is not considered further. There is no urgency in disposing of applications as such since although the rules prescribe time limits, if these are not adhered to, any deemed approval or deemed refusal status is not bestowed on the application. The applicant whose case is pending indefinitely cannot file a revision application because no orders of the State Government are passed, which can be challenged. For transparency and cutting short the delay, therefore a Committee system of consideration of applications (single window) seems desirable.
14. All applications for mineral concessions should be accepted centrally at the Directorate of Mining and Geology of the State Government and not at the district headquarters. It is desirable that a copy of the application, in all such cases where approval of Central Government is required under MMDR Act, 1957 and MCR, 1960 should be filed directly with the Central Government for present information and simultaneous processing.

15. The applications should be sent to the district level designated officers for scrutiny of the proposals with respect to the area being available for grant (revenue land, or private land), whether the area is a reserved forest or not, and existing information on mineral potential of the area applied for. The scrutiny at the district level office may be completed in three weeks' time.

16. The State Government may set up an empowered committee at the State level with representation of the District Collector and the State Department of Environment and Forests. The Committee could meet on a designated day every month and provide the single window clearance. For transparency, the applicants could also be informed that their applications were being listed for consideration in a particular meeting, and if they so desired, they could be available for giving clarifications to the empowered committee.

17. The recommendations of the State level empowered committee shall be forwarded to the Ministry of Mines for further necessary action.

(b) For conveying Central Government approval.

18. The applications for mineral concessions are to be decided in a time bound manner. However, as already noted, the law does not provide any relief to the applicant if the prescribed limits are not adhered to. While the State Government is required to convey a decision in a time bound manner as per mining law, in such cases where approval of the Central Government is required to be taken, it is not always within the control of the State Government to adhere to the prescribed time limits.

19. Since granting of mineral concessions involve competing interests with more than one applicant applying for the same area, there can be no
concept of deemed approval. The Government has earlier experimented with the concept of deemed rejection in such cases where the State Government did not pass any orders within a prescribed time, but it was felt that this provision encouraged procrastination on part of the State Government and was harsh vis a vis applicants whose applications were rejected due to sheer inaction by State Governments. Such ‘deemed rejected’ applications inflated the number of revision applications filed with the Central Government, leading eventually to the amendment of the law to delete the provision for deemed rejection.

20. For such cases where prior approval of Central Government is necessary, within the time prescribed in law, the State Government is required to seek approval of the Central Government. When an application is recommended by the State Government for approval of the Central Government, inter alia the following are required in the Central Government; inter alia the following are required in the Central Government for processing the case further.

(i) Completed Check list with documents mentioned therein.
(ii) Map of the area
(iii) Justification for invoking discretionary power with the Central Government under various sections of the MMDR Act, 1957 and rules of the MCR, 1960.
(iv) Inter-se merits of various applicants for the area, in particular of previous applicants, if the recommendation is in favour of a later applicant. Copies of rejection orders of earlier applicants, if already rejected.
(v) Information on mineral availability/potential of the area concerned, with documentary evidence.

21. In most cases, it is found that the recommendations of the State Government are incomplete, and information is received only after repeated correspondence. In many cases, the recommendations are not processed any further and the files are closed after the State Government fails to respond. After comments and documents from the State Government are received, individual case files are put up for consideration and approval of the Minister in charge.

22. The delays arising due to protracted correspondence can be perhaps avoided if an Empowered Committee in the Ministry of Mines takes up the cases for
consideration in a periodic manner. The State Government(s) would be required to submit the merits of its recommendations in respect of various applications to the Committee. The recommendations of the Committee could be put up for acceptance by the Minister in charge, instead of the Minister approving every single recommendation in the concerned file as at present.

23. Many a times, it appears that the information furnished by the State Government while seeking approval of the Central Government are not complete in that information regarding other applicants for the area are not specifically mentioned. If an application requiring approval of the Central Government is also available with the Central Government, and it is found that within the stipulated time mentioned in MCR 1960 relevant recommendation for the area concerned has not been forwarded by the State Government, it could be in the fitness of things to list such applications also for suo moto consideration of the Committee, in which the State Government would be required to give their views.

(C) For facilitation after approval

24. Since reconnaissance operations mainly involve aerial surveys, inter-departmental coordination is required at the Central Government level for undertaking aerial surveys under RP. The various bodies involved in the exercise involve the Ministry of Mines, DGCA, Ministry of Defence, IB, Department of Atomic Energy, GSI, NRSA, and the Department of Telecommunications.

25. At present, after the Department of Mines conveys the approval for grant of RPs, the applicant is entitled to file application with Director General of Civil Aviation (DGCA) for the permission for airborne survey. (However, in most cases the applicant waits for the Letter of Intent to be issued by the State Government concerned before applying for the airborne survey. This is primarily because the applicant prefers to involve the State Government as well, since inception.).

26. After the application for airborne survey is received, the DGCA routinely sends off the copies to various Departments. While the Ministry of Defence normally takes about 45 days to complete their internal examination, which primarily involve obtaining comments of individual Divisions and Departments,
Ministry of Home Affairs takes about 30 days for the purpose. The final approval decision is taken on the files of the Ministry of Civil Aviation and conveyed by DGCA.

27. It thus appears that for reconnaissance operations, for granting permission for aerial reconnaissance there is a need for a single window clearance. The Empowered Committee in the Ministry of Mines, with participation of DGCA, Defence and IB could accord the permission for the aerial survey.

28. Other than permission for aerial survey, post approval coordination involves the Ministry of Environment and Forests. Issues relating to clearances from environment and forest angle could also be discussed and finalized in the empowered Committee with participation of appropriate officers nominated by the Ministry of Environment and Forests on the Committee.

29. The composition of the Committee, therefore, would have representative of Ministry of Mines, Indian Bureau of Mines, Ministry of Environment and Forests, DGCA, Ministry of Defence, Intelligence Bureau and the State Government concerned. The terms of reference of the committee would be to consider according Central Government approval to the mineral concession applied for, according permission for aerial reconnaissance and sort out issues regarding environment and forest clearances. For transparency, the applicants could also be informed that their applications were being listed for consideration in a particular meeting, and if they so desired, they could be available for giving clarifications to the empowered committee.

(a) Proposed time frame for disposal of applications at different stages.

30. In view of the above, while a Committee approach could be prescribed for consideration of applications, the following time schedule could be prescribed for consideration at every stage.

<table>
<thead>
<tr>
<th>Stage</th>
<th>RP</th>
<th>PL</th>
<th>ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary scrutiny of applications as per checklist in the office of DMG (HQ) and forwarding the completed applications to the District level office.</td>
<td>7 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrutiny of applications at the District level and to invite report from all concerned</td>
<td>21 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Departments</td>
<td>Time Limit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearance from State Forest Department (FDO) under Forest Conservation Act, 1980, SDO/Tehsildar, Etc.</td>
<td>30 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single window State level clearances from the Empowered Committee</td>
<td>30 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government of India clearance from Ministry of Mines and other Ministries through Empowered Committee</td>
<td>45 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue of sanction by the State Government</td>
<td>15 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Execution of lease agreement of RPs at the district level.</td>
<td>Within 30 days of the issue of sanction letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE 20

Grant Of fresh lease/renewal of mining lease (ML) –A comparative Study- by SAIL

- One Govt. i.e. federal State is fully empowered to grant MLs.
- The time taken for the grant of ML is normally between 12-24 months. The time taken frames for activities involved are fixed & adhered to. The proponent submits application for grant of ML to Mining Registrar in Ministry of Minerals and Energy.
- The process is Single Window. The four agencies involved are.
  1. Ministry of Minerals and Energy
  2. Ministry of Environment
  3. National Native Title Tribunal
  4. Land acquisition authority in local Govt.

- Minister of Minerals and Energy is the final approving authority. He takes decisions in consultation with other Ministries such as Environment Ministry, which sets the environment conditions. There is close interaction between Department of Minerals and Energy and agencies responsible for protection of environment.

- If land belongs to Native Title (NT) party (aboriginals, tribals etc.), the matter is sorted (mt by holding negotiations between the party and the proponent.

- The mining areas have been categorized as per environmental sensitivity. The conditions and procedure for each category are predetermined and identified in each case.

- Grant of Mining Leases in highly sensitive areas such as National Parks require approval from both houses of Parliament.

- Public participation is ensured for projects that may cause significant environment disturbance.

- Proponent is required to submit a bond to take care of environmental conditions.

- Financial and technical strength of the proponent are taken into consideration before the grant of ML.
• The maximum area for mining lease is 1000 hectares.

• The term of ML is 21 years and may be renewed for further terms.

**Nova Scotia, Canada.**

• The Federal State is fully empowered to grant Mining Permit (MP is same as ML in India).

• It is a Single Window concept. The three government agencies involved are:

  1. Department of Natural Resources (DNR)
  2. Department of the Environment
  3. Department of Labour

• The project is first assessed from Environment angle, before processing for Mining Permit (MP). Once the project gets clearance from environment angle, the proponent makes an application for MP.

• A highly structured process for the environmental assessment process. Full participation of public and other Govt. Agencies. Fixed time frames are complied with.

• The time taken for grant of MP is 12-36 months. The project can be rejected if there are strong chances of adverse socio-economic and environmental impacts. Some of the areas of public interest are prohibited for mining while at others conditions may be imposed. The protected areas include Provincial Parks, Protected Beaches etc.

• Deptt. Of Natural Resources require a bond or security to ensure that reclamation work is carried out.

• The minimum term of Mining Permit is 20 years. Water approval is required only for the use or alteration of a watercourse or water resource.

**Indonesia**

• Central Govt. has the powers to grant ML.
• Minister is the final approving authority.
• It is a Single Window concept. The Minister takes the opinion of the Governor of the relevant province/region in which the minerals have been found and the Governor has to present their objections, if any, within 3 months. To assure the implementation of relevant mining activities, the Minister is authorized to request and to assess the evidence of the ability and capability of the relevant applicant to undertake mining activity.
• The time taken to grant ML maximum 2 years.
• The size of the area granted for ML is 1000 hectares maximum.

• The Minister may impose special conditions in addition to standard conditions as stipulated by the Government.
• The term for ML is maximum of 30 years which can be extended by 10 years each for two times. Holder of the ML is obligated to compensate land owner for any damages and to restore and rehabilitate the area after completion of mining.

India.
1. Before start of the mining activities, three clearances from different agencies are required. These are:

   1. Approval for grant of ML
   2. Forest Clearance
   3. Environment Clearance.

• Three separate applications are required to be submitted for these clearances.

• Central Govt. grants forest and environment clearance based on the recommendation of the State Govt.
• For major minerals like Iron Ore, the Central Govt. approves ML based on the recommendation of the State Govt.
• No. of total agencies involved are about 10.

• Interdependency between different agencies delays the process.

• Time frame for approval of ML is 12 months and for forest clearance is 7 months, but is never adhered to. Total time taken is usually 7-8 years for the grant of ML.

• Proponent has to follow-up the proposal from table to table.

• Conditions for the grant of ML are not fixed. It is influenced by the individual assessment.
• No preference is given to technical expertise and financial strength of the proponent.

• There is only one agency (IBM) for approval of Mining Plan and takes normally 6-8 months.

• Identification of non-forest land for compensatory aforestation takes long time and at times takes more than a decade.

• Requirement of enumeration of trees, cost benefit analysis carried by the State Forest department is time consuming (10-12 months)

• Proponent has to obtain clearance from State departments on availability of electricity and water for environmental clearance.

• Public hearing is required for environmental clearance, which is organized by State Pollution Control Board. This activity has become a hot bed of vested interest and hard bargaining by NOOs.

• ML is granted for 30 years with two extensions of 20 years each.

B. Suggestions for improvement.

• Aim for Single window concept through Nodal Agency in the State Govt. headed by Minister and Mines and members from concerned deptts. of State Govt. and Central Govt.

• The Nodal agency to identify the areas to be granted for mining.

• Identified areas may be classified into 3-4 categories based on environmental sensitivity.

• The Nodal agency to pre-determine the conditions for each category of land based on environmental sensitivity and the nature of the proposed activity (prospecting, mining etc.)

• The Nodal Agency may complete the requirements of identification of land for compensatory aforestation, enumeration of trees, cost benefit analysis, forest density, public hearing etc. before inviting applications for ML.

• The Nodal agency to fix the compensation payable by the proponent for the dereservation of the forest area.

• Application for grant of ML to be invited after completing the above activities.

• An Apex Committee/Tribunal in Ministry of Mines, GOI to be constituted, which
would resolve the issues unsettled at Nodal Agency level.

- The Notice for invitation for Mining Lease must include criterion like mining experience of the applicant and financial strength of applicant. Domestic steel companies already having mines for captive use to be given preference for the grant of fresh mining leases.
- Two Renewals of ML for 20 years each to be automatic if no additional forest area is broken or there is no increase in capacity.
- There should be more than one agency for approval of Mining Plan. At present only IBM is authorized to approve the mining plan.

**Comparison Chart for grant of ML in other countries.**

<table>
<thead>
<tr>
<th>Ownership</th>
<th>India</th>
<th>Western Australia</th>
<th>Nova Scotia, Canada</th>
<th>Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Centre and Federal</td>
<td>Federal State</td>
<td>Federal State</td>
<td>Central Govt.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time taken for grant of Mining Lease</th>
<th>India</th>
<th>Western Australia</th>
<th>Nova Scotia, Canada</th>
<th>Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7-8 years</td>
<td>About 12-24 months</td>
<td>12-36 months</td>
<td>Max. 2 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of agencies involved</th>
<th>India</th>
<th>Western Australia</th>
<th>Nova Scotia, Canada</th>
<th>Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term of ML</th>
<th>India</th>
<th>Western Australia</th>
<th>Nova Scotia, Canada</th>
<th>Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 years</td>
<td>21 years</td>
<td>Min.20 years</td>
<td>30 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Documents required</th>
<th>India</th>
<th>Western Australia</th>
<th>Nova Scotia, Canada</th>
<th>Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-Approved Mining Plan</td>
<td>-Description of the area</td>
<td>-Detailed map and description of the site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-No dues certificate on royalty/dead rent of the other mines of the proponent in that state</td>
<td>-Assessment of the mineral bearing capacity</td>
<td>-Mine plans that contains maps of location of mines, table of ore reserves, engineering drawings, details of mining equipment to be used, relevant details if underground mining, storage area of waste.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Income Tax clearance certificate</td>
<td>-Details of available finances</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Certificate for MLs already held, applied for, applied for but not granted.</td>
<td>-Details of technical advisors available</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Requisite fee</td>
<td>-Details of the work proposed in the area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Feasibility Report in addition separate applications are filed for Forest.</td>
<td>-Status of the land, reserves, roads, catchments areas, forests, aboriginal land claims and environmental planning instruments clearance and</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Suggestions to reduce process time for grant/renewal of Mining Lease.

1. Formation of Nodal Agency in State

This concept is akin to “Single Window Concept’ being followed in many countries worldwide and is quite successful. The basic purpose of the concept is to make the process simpler, shorter and faster. The proponent to get single window clearance for mining, forest and environment from the nodal agency.

A nodal agency consisting of following officials from Mining, Forest, Pollution Control Boards of the State and officials from Ministry of Environment and Forest from Central Government can be formed under the chairmanship of Minister of Mines in each State bearing the minerals.

1. Minister of Mines of State Government, Chairman.
2. Representative of State Forest Department, Member
3. Representative of State Pollution control Board, Member
4. Representative of Forest Department of MOEF, GOI, Member
5. Representative Environment Department of MOEF, GOI, Member
6. Representative of State Mining Department, Secretary

For development of iron ore mining, Ministry of Steel, GOI, may write to States bearing iron ore like Jharkhand, Orissa, Chhattisgarh, Karnataka and Goa indicating like if iron ore requirement for next 30 years. Each State can constitute its Nodal Agency, which would have powers to grant of Mining Lease, Forest Clearance and Environment Clearance. The agencies will co-ordinate with district authorities and other departments of State Government. The following activities to be completed in advance by the Nodal Agency:
a. to identify the areas to be granted for mining.

b. Categorization of forest area into 3-4 categories and fixing of environment conditions according to the environment sensitivity of the land and the mining activity proposed.

c. To divide total mining area in State into different blocks and to fix the forest density of each block.
Nodal Agency to identify land for compensatory aorestation, to complete the exercise of enumeration of trees, to carry out the cost-benefit analysis etc.

d. To fix the compensation payable by the proponent for the dereservation of the forest area.

e. Completion of Public hearing process and finalization of the requirement of peripheral development: the proponent could be informed in advance of the likely problems and issues that he is likely to face there so that and he may modify/alter his project proposal accordingly and lesser time is consumed later.
The nodal agency to have clear authority to take decisions related to the above mentioned activities. All above activities can be completed in 18 months time.

The identified mining blocks now have forest and environment clearance.

2. Constitution of Tribunal/Apex Committee- An Apex Committee/Tribunal to be constituted under the Ministry of Mines, GOI, which would resolve the issues unsettled at Nodal Agency level.

3. Inviting Application for grant/renewal of Mining Lease.

The State Government can invite application for grant of mining lease after the Nodal agency completes the exercise of grant of forest and environment clearance. The Notice for invitation for grant of ML must include important criterion like

- Mining Experience of the applicant
- Financial strength of applicant.
Existing Steel Plants should be given preference for grant of fresh Mining Leases for captive consumption over the proposed steel plants.

The applicant would submit single application for grant of mining lease, forest clearance and environment clearance. The mining lease can be granted within 6 months time as forest and environment clearance activities have already been completed.

4. **Minimum area for grant of ML**

Minimum area for grant of mining lease should not be less than 100 hectares and recoverable reserves of at least 60 million tonnes. Large scale mining with mechanized and scientific methods to be encouraged.

5. **Two Renewals of ML to be automatic.**

Initial grant of mining lease is for a period of 30 years. Next two renewals for a period of 20 years each should be automatic. The Nodal Agency should fix conditions for compliance by the holder before revival of ML. In case, there is no increase in forest area or capacity in the existing mines then conditions should not be the same as in the case of new grant and the renewal may be automatic.

6. **Aforestation and Peripheral Development through independent body.**

In independent agency with representative of State forest department and mining industry be engaged for aforestation and peripheral development around mines.

7. **Approval of Mining Plan.**

There should be more than one agency for approval of Mining Plan. Indian Bureau of Mines (IBM) may authorize more number of agencies in each State for this job. At present only IBM is authorized to approve. This will reduce time for approval of Mining Plan.

8. **Status on availability of water/power**

The concerned State water and electricity departments should in advance, identify whether it is possible for them to make available water and electricity for the miner at the site. If it is not possible for them to make necessary arrangements for water and electricity at the site, then the site could be put off.
the limits for the miners. But in any case this exercise should be taken up before the proponent submits his application.

9. **Categorization of Mining areas**

The mining area should be categorized into three- four types according to their environmental sensitivity. Depending upon the type of the proposed mining activity such as exploration /Prospecting/mining, conditions could be developed in advance, for grant of various tenements. These conditions would take care of environmental, health, safety, community and other issues.

For the most sensitive categories such as Nature Reserves and Wildlife sanctuaries, mining activity may be prohibited.

10. **Infrastructure requirements.**

It is seen that when the infrastructural authorities are approached for road, railway and other facilities around the mineral deposits, heavy demands are made towards the capital cost for providing these facilities. It is necessary that planning for these facilities are made in advance and burden to be put on the lessee only if these facilities are for lessees’ own use.
## INDIA'S IRON ORE EXPORTS

<table>
<thead>
<tr>
<th></th>
<th>+64%</th>
<th>64-63%</th>
<th>62% &amp; below</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>19.98</td>
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SUGGESTIONS OF MEMBERS OF EXPERT GROUP

Following suggestions have been made by Members of the Expert Group.

- Problem of multiplicity of agencies and delays at lower levels of clearances. The process of granting/renewal of mining lease is tedious and takes several years while in other countries this takes only 2 years.

- Single Window Concept for granting of mining leases should be implemented. State Governments should initiate steps for identification of area and should work for identification of mining area, getting environment/forest clearance etc. and charge compensation from the user. With this compensation State Government may go for development work in the State.

- Once minerals deposits are identified and mapped the decision for permitting the mining in that area should be taken at one go unlike the existing mechanism of piecemeal approval i.e. individual clearance to individual mines. This may require amendment in statutory provision.

- In Karnataka an umbrella mechanism/single window mechanism is being implemented for the Industrial Estates. The same principle could be adopted in grant of mining leases. Under this system, once mineral deposits get identified in map, the decision for permitting the mining in that area should be taken at one go unlike the existing mechanism of present piecemeal approval i.e. grant of individual clearance for mining leases. This may require amendment in statutory provisions. At the stage of notification of an area for grant of Mining Lease particularly if the same is falling in forest area the state government should process and obtain advance clearances from forest, wild life, biodiversity angle etc. at state and central government level. After these clearances are obtained, the mining lease may be notified. State Government may levy service charge for this facility once the lease is granted to an applicant.

- Where it is known that mines are situated in forest area, government should first take a decision as to whether to develop the mineral resource in forest area or not. Mining in forest area implies degradation of forest. Mapping of mineral area was suggested.
• An Empowered Committee for grant of mining leases in case of iron ore, chrome ore and manganese ore should be formed at the level of Secretary (Mines) of the State Govt. which may include the district collector, the district forest officer, district mining officer. This Empowered Committee may meet periodically and take decision for grant of mining leases whereby the case may be referred straight to the State Govt. for onward transmission to Central Govt.

• If power of granting of mining leases is delegated to Committee under the State Government that would reduce the time in processing the mining lease application.

• Government of India may review the policy for granting of mining lease and export of iron ore etc. on the basis of data made available possibly by institution like IBM or any other institution giving the reserve available in the country, reserve more suitable for sponge iron plant or the steel plants.

• Central Government may take action for imposition of such condition on the mine owners that would allow the mine owner to export a certain percentage of mine proceeds and supply the other certain percentage of mine proceeds to domestic customer. A judicious mix between export and supply to domestic customers is the need of the hour. State Governments are not in position to impose such condition on the mine owners due to possibility of legal battle with the mine owners.

• Such mining leases granted to mine owners which have not been developed by the mine owners since decades and are lying idle, should be cancelled.

• Creation of a “Green Fund” through the contribution of mine owner for carrying out activities relating to environment protection/forestation etc. by separate implementing agency.

• There should be a minimum size for the mining leases. This varied from suggestion of minimum 2 million tonnes reserve to 10 hectares minimum in area.(NEERI/IBM)

• Ministry of mines may prepare a check list of documents required for accompanying the revision petition. This check list should be mandatory for accompanying every revision petition. Revision petition bench should be periodically held at state headquarters to facilitate the disposal of cases within the State.
• It has been suggested that like Coal Mining is being dealt with in Ministry of Coal, similarly, subject matter relating to mining of iron ore, chrome ore, manganese ore which are basic raw materials used in steel industry should be handled in Ministry of Steel in place of Ministry of Mines.
• The criteria for granting of mining lease should be credibility of the applicant and not the time of receipt of application.
• Delegation of more powers to state government, particularly, in the area of environment/forest clearance and in the area of granting mining leases outside the forest area. Necessary amendment in Environment Protection Act for delegation of powers may be made.
• Forest conservation Act, MOEF guidelines are required to be modified, reviewed for facilitating quick disposal of the renewal of mining leases.
• The procedure for forest clearance for mining industry should be different from say construction of demo/reservoirs where forest is last completely. In mining sector, after closure of the mine, land reverts back to the forest department.

There should be only three tiers-DFO, Nodal Officer & Departmental Secretary rather than present seven step for getting clearance.

• It is still possible to conduct mining operations without damaging the forest resources, biodiversity and ecology. State-or-art-technology for processing and beneficiation of ore is required.
• Scientific mining should incorporate: guidelines on dumping sites; guidelines on minimizing dust and noise pollution; augmentation of Water resources and Local Green Cover. NEERI has proposed these guidelines which may be seen at Annexure…..relating to views on Questionnaire (Q.No.10).
4.1. Captive mines as against pure mining companies’ requirement of large integrated steel plants.

Existing large integrated steel plants need raw material security. There is huge financial investment in integrated steel plants in which either government or its people are directly involved as investors/shareholder/financial institutional lenders.

The steel producers supported captive mining on following grounds:

(i) Large integrated steel plants are capable of fully utilizing the resources.

(ii) India has a competitive edge for Production of Steel due to availability of iron ore.

(iii) Captive mining in iron ore is not practiced in other iron ore producing countries (Brazil, Australia) because, per capita availability of iron ore, per person, is very high in these countries. Also each country has chartered a different path for its development.

(iv) Indian steel industry is already facing the problems of coal/coke. There should be surety of at least one raw material (iron ore) which is possible through captive mining approach.

(v) As brought out in the UNCTAD report on the iron ore market 2004-06 as “the vertical integration in global iron ore and steel sector has been diminishing in the market economies over the last 20 years. Steel companies in Europe and North America have withdrawn from mining and mining companies have consolidated with the restructuring of the Russian & Ukrainian industry. The new strong tendency towards more direct links between mines and steel works as emerged. With the integration of the Chinese iron and steel sector into the world economy along with new dynamic steel producers such as Mittal Steel Group under Laxmi Mittal vertically integrated companies have been introduced. Today, 28% of the total iron ore production is estimated to be controlled by the steel industry.

Iron ore producers opposed captive mining on the following grounds:
(i) Mining companies not only supply the raw material as per the requirement of steel plant but they undertake scientific mining with due emphasis on protection of the environment.

(ii) Mining is a separate economic activity.

(iii) Captive mining leads to subjective mining/selective mining. Only grade required for the steel plant is mined and other ore is left behind. Thus, there is no proper optimum resource utilization by steel companies.

(iv) Mining companies are capable of meeting the entire requirements of large steel plants. RINL is getting all its iron ore from NMDC.

(v) This is the age of specialization. Steel plant should make steel what it is best suited for, and mining company should do mining – an activity it specializes and excels in.

There are forceful views on both the sides. If an integrated steel plant is put up at huge investment and promoters/investors need to have assured quality, quantity price control, there is no harm in having captive mining. Similarly, instead of investing in mining, if a steel plant is set up on the assured supply basis from a mining company it can choose to have that choice.

Ultimately same mining professionals will be employed by integrated steel producers or a stand alone mining company. These professionals are accountable for scientific, eco friendly best mining practices.

4.2. Value addition per se as against value addition within state boundaries for preferential grant of leases.

On one side of the spectrum we have Government of Chattisgarh, Orissa, Jharkhand & Karnataka i.e. mineral rich states who opine are all for value addition within state boundary for grant of preferential leases. They opine:

(i) Mineral bearing states must give priority for industrial development within their own state, over other states. This will correct the regional imbalance, help in removal of backwardness of the mineral bearing states.

(ii) Mineral resources of a state are finite and shall not last forever. State should have right of according priority, while granting mining leases,
for conforming to its own objective of generating employment and enhancing its financial resources.

(iii) Most Mineral resources are located in First Schedule Areas. In respect of scheduled areas, the constitution empowers the Governor of the concerned state to make regulations, which would have over riding effect even on the Acts of Parliament.

(iv) The requirement of non-mineral bearing states can be met after meeting the legitimate requirement of the mineral owning states on priority.

(v) The concern shown on restriction of iron ore movement is not well placed. State governments have been allowing iron ore movement to other states.

(vi) Iron ore is a bulky commodity, thus there should be a policy to promote steel plants in the vicinity of iron ore mines rather than placing undue strain on the already strained railways and other infrastructure facilities in the country.

On the other hand mining companies such as NMDC, Federation of Indian Mineral Industry (FIMI) and Steel Makers such as Steel Authority of India Limited (SAIL), Essar Steel Ltd. oppose the demand for value addition within the state by the State Government on the following grounds:

(i) Minerals are unequally distributed by nature. Some states are richer in respect of certain minerals while others are rich in other minerals. Value addition should not be the sole criteria for grant of Mining Lease/Prospecting License. Capability for systematic mine development, proper conservation and utilization of the minerals should also be included in the criteria for preferential treatment.

(ii) Factors such as availability of raw materials, water, nearness to port, labour and flatness of land etc. should be the deciding factor for setting up of a steel plant.

(iii) Market forces should decide the location of the steel plants in the competitive environment as besides iron ore, other raw materials such as limestone, dolomite, abundance of water etc. are also required for production of steel.
(iv) Instead of state governments insistence on value addition, they should encourage the domestic demand of steel by promoting infrastructure and industrial development.

(v) The policy of value addition within the state militates against the federal concept, integrity of nation and total use of economic strength of the country.

4.3. Scientific Mining and optimum utilization of all mined product for mineral conservation.

On the issue of scientific mining, and optimum utilization of ROM (Run of Mines) some views were exchanged for a minimum scale of operation. Quantity wise range of 2 million tonnes per annum (MTPA)-4 MTPA and area wise 10 hectares minimum were considered as optimum size. However, no consensus emerged.

It was agreed that putting statutory restriction of mine size would be unreasonable.

4.4. The case for and against direct reduction plants/mini blast furnace plant.

There are three categories of direct reduction plants in India: Large, gas based sponge/steel plants such as JVSL (ii) Steel plants using rotary kiln like Monnet (iii) Other small steel plants. Indian Steel Alliance and MD, TISCO were of the view that sponge iron plants and mini blast furnaces consume high grade of iron ore and coal/energy but produce low metallic. Sponge iron technology was taken to be expensive alternative technology to the integrated steel plant. However, according to TISCO, Mini Blast Furnaces have good future if input mix of 40:60 in favour of sinter is used in the production process. Mini Blast Furnace may be regarded as supplement to the integrated approach in view of non availability of coking coal.

Essar Steel Limited argued that a steel plant such as their’s utilizes iron ore fines completely by following pellets route to produce DRI. That company uses 70 to 80% of pellets for steel making which is made only from fines. Thus pellet based DRI plants need to be encouraged.

Sponge iron Manufacturers’ Association SIMA agreed that DR Process Technology (Sponge Iron) at small scale should be discourage. Bigger players supplying the metallic to induction furnace should be encouraged.
Steel Authority of India Limited felt that selective mining of high grade iron ore for DR Process should not be allowed. Mini Blast Furnaces are dependent on selective availability of iron ore lump leading to selective mining. These blast furnaces have less resource/energy efficiency compared to large size blast furnace. Stand alone mini blast furnaces may not be comparable in terms of mineral conservation. Hence mini blast furnaces on stand alone basis should be discouraged.

Governments of Jharkhand and Chhattisgarh have pointed out that technologies keep on improving and choice of technology is best left to the industry.

4.5. **Rationale and desirability of exports.**

No other issue evoked as much hardening of stand on iron-ore policy- as much as the issue of exports did and still continues to do.

On the one end of the continuum are organizations like TISCO, Indian Steel Alliance, Essar Steel and State Governments of Chhatisgarh, Jharkhand who are absolutely opposed to export of iron ore.

At the other end of the spectrum are organizations such as FIMI , which want absolute freedom in the arena of iron ore exports, within the present walls of government EXIM policy.

Somewhere in between are organizations like SAIL, NMDC, Government of Orissa whose reactions vary from non-encouragement of iron-ore export, revision of ceiling limit for export of iron ore from 64% content to 63%; to insistence on continuance of international trade in iron ore but not at the cost of domestic industry; allowing export of iron ore fines and low grade mineral subject to receiving substantially higher export mines.
Those who do not want iron ore to be exported at all launch the following arguments:

i) India has population and iron ore. At current level of steel usage being approximately 29-30 kgs per capita, in the coming decades consumption of steel will increase with government’s emphasis on infrastructure development. Availability of iron ore will be critical.

ii) China has increased production of steel from 30 MT to 80 MT in fifteen years. Now it has increased the steel production to 230 MT. If it is possible for China, the same may happen in case of India. Iron Ore needs to be preserved for domestic future consumption.

iii) Australia & Brazil have vast iron ore reserves in comparison to India. Also their population base is smaller than India. Per capita availability of iron ore in these countries is more than in India.

iv) Ban on export of iron ore is necessary from conservation point of view.

v) Instead of exporting iron ore, we should do value addition and export steel/pellets. This will lead to forward integration and get country more foreign exchange.

vi) The resources of iron ore, manganese ore, chrome ore are rather linked with expansion of steel industry to 110 MT by 2019-2020 and additional beyond it. If exports are not stopped, availability of iron ore for domestic market shall be severely constrained.

FIMI launches spirited arguments for exporting iron ore:

(i) Mining is an independent economic activity. As an independent economic activity there should be no fetters imposed on the utilization of the produce by curtailing and banning export.

i) More than 90% of Indian iron or export consists of iron ore fines and concentrates which do not have much domestic requirement at present. Iron ore fines if not consumed cause environmental pollution. The remaining 10% of iron ore is exported in the form of lumps which is qualitatively & quantitatively restricted and canalized.

ii) Export of iron ore increase has tested the available infrastructure facilities such as railways, ports. The same infrastructure which was considered to be fit for handling not more than 40-45 MT of iron ore exports has withstood the pressure of over 76 MT of iron ore exports in 2004-05.
iii) Banning iron ore exports would be counter-productive to the huge investments made already in infrastructure railway lines, rakes, transportation, sidings, ports etc.

iv) Nature of Indian iron ore & steel industry is highly fragmented. Iron ore production is noticed maximum in Goa, Karnataka, Orissa where steel plants are not located. The iron ore production in these states was export driven.

v) Sponge iron producers need calibrated lump ore. Calibration of lump ore leads to more generation of fines. In 2004-05 India produced 10 million tonnes of Sponge Iron. This was also possible due to export market demand being available for fines a by-product of CLO production, in China. The export of fines, resulted in more CLO availability to sponge iron producers in India.

vi) India’s contribution in world iron ore trade was 11% approximately in 2003-04. If exports of iron ore is banned in India, Australia & Brazil will readily meet the gap caused by India’s exit. It will be difficult for India to register presence again once this market is lost.

vii) Indian Steel producers have accounted for half of total iron ore production since early nineties. If export is banned, there will be no economic activity for half of the iron ore mines in India. This will result in layoffs of primary & secondary workers whose livelihood depends on iron ore exports. Steel Industry cannot absorb the personnel displaced from iron ore mining industry.

viii) Iron ore exports provided Rs. 3321.83 crores, Rs. 3655.15 crores and Rs. 7042.08 crores as foreign exchange in 2001-02, 2002-03, 2003-04, respectively. Banning of iron ore exports will not be met by equal value addition by the Steel industry.

ix) The steel is a cyclical industry; economic activity of mining is sustained by exports during downturn in steel industry. The arguments for and against iron ore can keep on adding. However, what is required is a balanced approach between two extreme positions of banning exports & total opening up of iron ore export boundaries. Domestic steel industry requires sustainable development for which at least one raw material is required to be assuredly supplied.
4.5.1. **Procedural delays & difficulties hampering iron ore production & availability** was discussed in great length. What emerged out of the discussion was the following:

i) It was agreed by all members of the Committee and other Stakeholders in general that there is an urgent requirement of changing procedure to speed up grant of prospecting leases, granting of mining leases and renewal of leases.

ii) Steel Authority of India Limited did a comparative study on procedural delays in grant of leases. The same has been dealt in Chapter 3. However, what has emerged as a common denominator accepted by members of the Committee and other important stakeholders is that there is an urgent need to do away lengthy procedures, cut levels of file movement and introduce an urgency in grant/renewal of mining leases.

iii) The various rules and regulations governing conservation of forests and environment cause the biggest heart burning amongst mine owners. There has been a demand that government should once and for all decide (once an area of mineral ore is identified) as to whether it wants to preserve the environment & forests, or it wants to allow mining in that area. Once it is decided that mining should be allowed, then the road blocks should not be tolerated. In short, issue of having mines u/s ecology should be sorted out once and thereafter, there should be no dithering.

iv) Lack of proper infrastructure facilities such as ports, railways, road linkages has adversely affected the availability of iron ore to various consumers.

“However, now the state governments & central government in recent months, have tried to support the growth of iron ore industry, first by speeding up licence and permitting procedures and second by vowing to spend as much as 25 billion dollars on upgrading ports and transport links to the coast”. (Source IISI, world steel in figures 2005).

4.7. **Harmonizing the requirements of mineral extraction with the paramount ecological imperatives and sustainable developments.**
A number of confrontational situations are developing between the interests of mining, forest conservation and environment protection. Some of the suggestions to resolve these conflicts and harmonize the interest of mining mineral resources with forest conservation and environment protection given were:

i) A Standing Committee may be constituted by the central government which may consist of officials of state and central mining department, state forest department and Ministry of Environment & Forests at central government. This committee may oversee the preparation of exploration and mining plan, implementation of action programme in actual mining.

ii) A mapping may be carried out for the total iron ore area of the country. The area may be divided in 3-4 categories based on forest and environmental sensitivity.

iii) State of the art technology for processing of ore and beneficiation of ore is required for conducting mining operation with minimal impact on forest resources, bio-diversity and ecology.

iv) NEERI has suggested guidelines on dumping sites, guidelines on minimizing dust and noise pollution and augmentation of water resources and local green cover. This may be seen in detail in views of NEERI at Question No.10 at Annexure.

v) The real damage to bio-diversity takes place from unscientific and illegal mining clearance should be accorded to all mining projects where scientific and systematic mining is to be undertaken.

vi) The examples of ALCOA in (W.Australia), TISCO in Noamundi, Sesa Goa in Goa, NMDC in Bailadila, point out that mining & ecology can work together.

4.8. **Accrual of mineral royalty to the state government as against other collateral levies by State Government.**

The need of ad-valorem rate of duty for iron ore, was discussed. It was pointed out that whereas iron ore mining companies made huge profits by export of iron ore, the states bearing iron ore- Orissa, Chattisgarh, Jharkhand, Karnataka did not benefit much as iron ore continues to be charged with royalty on tonnage basis.
Considering that royalty rates cannot be revised earlier than three years after an upward revision in royalty rates, ways and means for development of tribal areas and weaker sections of mineral rich states were discussed. Following points emerged:

i) Besides royalty, State governments seek to impose collateral levies and cesses to increase the revenue from mining of minerals. There should be adequate rates of royalty to cover the collateral levies and cess.

ii) Part of royalty may be kept in a separate fund for development needs of the local, tribal & weaker sections in mining areas. The example of Government of Maharashtra which has created a fund of the royalty equivalent to 5% of proceed earned every year, may be followed by other states.

iii) State governments, themselves are not spending any portion of royalty for the development of effected area. 50% of the royalty accrued should be earmarked for infrastructure development.

iv) The three State governments- Chattisgarh, Jharkhand & Orissa pitched for ad-valorem rates of royalty, stating that ad-valorem rates should be imposed on iron ore and the rates need to be increased. Issue of proper utilization of royalty should be best left to the discretion of the states.

v) The responsibility of fixation of rates of royalty should be delegated to the state government by amending Section 9(3) of MMDR Act. Mineral reserves belong to states and royalty thereon is right & primary source of sustenance for these states.

4.9. **Scheduled Areas – Tribal Areas**

1. The State Government of Chhattisgarh has urged the need to give priority to promote the setting up of steel plants in Schedule Areas for the development of these Areas and creating employment opportunities for the tribal population of such areas. Actually, this question is of relevance to the mineral bearing tribal areas in other
States as well. The Government of Chhattisgarh aver that the entire Bastar region, which has rich deposits of iron ore at Bailadilla and Rowghat, is a Scheduled Area inhabited by tribes and continues to be one of the poorest regions of the country. Due to restrictions on felling of trees, absence of agricultural land or industrial activity, tribal population of Bastar are distressed and live much below the poverty line. This is also leading to social tension and generating extremism and militancy creating law and order problems.

2. They have drawn attention to Section 5 (1) of the provisions "as to the administration and control of scheduled areas and scheduled tribes" in terms of the Fifth Schedule under Article 244 (1) of the Constitution of India. They have expressed the view that in terms of Section 5(1), the Governor has the power to render inapplicable to a Scheduled Area any act of Parliament or part thereof. This understanding does not appear to be correct. The power of the Governor is circumscribed by Sub Section 4 which clarifies that all regulations made under this paragraph shall be submitted forthwith to the President and, unless assented to by him, shall have no effect.´

Notwithstanding what is stated above, the constitutional and legal provisions with regard to mineral rights in tribal areas deserve special scrutiny and comment as under:-

3. Under different laws and regulations operating in different tribal areas prior to coming into force of the Constitution, there was a restriction in relation to transfer of land belonging to tribals in favour of a non-tribal within the Scheduled Area. But no such restriction was there so far as the Government land is concerned. Fifth Schedule, Article 224 of the constitution, has conferred special powers to make regulations for administration of tribal areas with the object to prevent tribals from exploitation by non-tribal. In Civil Appeal No.4601-2002 of 1997 (Samatha Vs State of Andhra Pradesh & others), a three judge Bench of the Hon’ble Supreme Court delivered a majority judgment on 11.07.97 highlighting para 5(2) of the Fifth Schedule. According to the
majority view of the bench, transfer of land belonging to the State of Andhra Pradesh in scheduled area to a non-tribal and mining leases/prospecting licenses were observed to be absolutely void and impermissible. This issue has not yet been brought before the Constitutional Bench.

In relation to special provision of Article 224 in respect of scheduled areas, so far as mineral rights are concerned, the Bench therefore appears to have taken a view as under:-

(a) No person (including the States) can alienate mineral rights over any Scheduled Area except in favour of tribals, which term include society consisting exclusively of tribals; and

(b) Except in favour of a State or Central Public Sector Undertaking, however, since such entities are deemed to work in the interest of the tribals. The issue has, however, not yet been tested in constitutional Bench.

5. Notwithstanding the above, the spirit of the provisions of Article 224 would appear to justify special consideration being given to the development and upliftment of tribals. The Group of Experts accepts that the Bastar tribes inhabiting scheduled areas of Chhattisgarh are undoubtedly, are a disadvantaged group and are mostly below the poverty line with few employment opportunities, as indeed emphasized by the Government of Chhattisgarh before the Expert Group. Hence, without going into the question of the Governor’s powers etc., there is every reason in the public interest and in the spirit of Article 224 of the Constitution to accord high priority to promote major investment and value addition to minerals located in Scheduled Areas including iron ore; by the setting up of downstream industries which add value, generate wealth and employment directly benefiting tribals in Scheduled Areas such as Bastar.

6. While doing so, however, utmost care should be taken to ensure that there is no damage to the highly fragile ecology, the already meagre forest
4.10. Beneficiation of iron ore,

1. **Excepts from note on Iron Ore beneficiation prepared by IBM:**

“Although Indian iron ores are considered as rich in Fe content, they contain high alumina (1-7%). Alumina is mainly contributed by clay (kaoline), gibbsite, lateritic material and some alumina also occurs as solid solutions in iron oxide minerals viz. limonite and goethite. The presence of high alumina in the blast furnace feed results in highly viscous slag which requires higher quantity of fluxes and in turn results in an increase in coke consumption and decrease in blast furnace productivity and coke rate in a more or less linear fashion. In order to improve the economics of iron and steel production only high quality iron ores with as low alumina as possible need be used in the blast furnace.

Most of the Indian iron ore mines are operated by selective mining for maintaining a high grade product containing +62% Fe for our internal consumption and export. There are large number of iron ore processing (washing) plants in India.”

“Scrubbing and screening are essential for aluminous and sticky ores which ensures removal of clay from the ore and improves the grade and handling properties. This practice of washing the ore generates three fractions namely – 30 mm+10 mm lumps (for direct use in Blast Furnace), -10 mm+0.15 mm classifier fines (for sinter plant) and –0.15 mm as slimes reporting to tailing dam as rejects, via a thickener.

These washing plants although relatively efficient amounts to considerable losses of iron values in the form of slimes (10 to 25% of the ROM processed) and discharged in the tailing ponds covering a vast tract of land. These slimes assay around 50-55% Fe, which in many countries is the rom grade of iron ore deposit.”

About 40 million tonnes of ore is beneficiated by washing every year to produce lumpy ore. Indian haematite is very soft in nature and generates substantial proportions of ROM as fines (between 33-60%) during mining, preparation of ores and beneficiation. The current practice of iron ore washing plants in India results these products viz.
1. Lumps (-30+10 mm size) charged directly to the Blast Furnace, classifier fines –10 mm which are fed to the sinter plant and slimes which are currently discharged as waste. These slimes from various washing plants typically assay in the range of 35-60% Fe. The generation of slimes is estimated to be 10-25% by wt. 

“Unlike iron ores in other countries, iron ore deposit in eastern India, though high in iron content, are characterized by high Al$_2$O$_3$/SiO$_2$ ratio (1.5 to 4.0) and their soft nature. Therefore, Mining, crushing and screening of iron ore for preparing calibrated feed for blast furnace (-40 +10 mm) generate lot of fines (-10 mm fractions of lower grade) amounting to about 30-60% of ROM. While beneficiating lower grade and medium grade iron ore, about 15 to 30 of ROM is discarded as process rejects (tailing and slimes) assaying 50% Fe posing disposal problems. ……………….”

“The Goan iron ore is basically of low grade, which is even considered as rejection in other parts of India/World. The Goan mining industry keeps its mining methods keeping abreast of technological advancement, always aiming to better its past performance. The Goan iron ore industry mainly depends upon the export market. On the subject of conservation of natural resources, it may be mentioned that iron ore with as low Fe content as 48% has been exported from Goa.” (IBM’s note on Iron Ore is at Annexure-I)

2. Beneficiation of lower grades of haematite below 60% Fe, by complex beneficiation techniques of world class, has, not been undertaken extensively in India so far; either by public sector mines captive mines or private sector mines. Prima facie, this is because of the hitherto abundant availability and production of higher grades augmented by undesirable ‘selective’ mining. The only exception is Goa, where several mine operators have kept abreast with technological developments and undertaken extensive beneficiation of the lower grades of haematite/magnetite which comprise the bulk of Goan ores.

The preponderance of Magnetite ore reserves are located in Karnataka, including Kudremukh. These ores have an ROM grade averaging between 30-40%, mainly Banded Magnetite Quartzite with varying degrees of weathering. Kudremukh Iron Ore Company has been successfully upgrading Kudremukh magnetite ores by wet grinding and magnetic separation to very high grade of above 66% Fe and above, as superior pellet feed. Primafacie, magnetic separation techniques should be feasible for the other large reserves of magnetitic ores in Karnataka, estimated to have a resource base of 7.9 billion tonnes and Andhra reserves of 1.4 billion tonnes.

In the interest of strategic conservation and life-prolongation of Indian iron ore reserves, it is imperative to mandate extensive beneficitation of lean haematite ores including ore below 60% Fe, at least upto 55% Fe. In the present IBM classification, haematite ore below 60% Fe is not even included in the reserves of iron ore. The bulk of Chinese iron ore, for example, is in grades below 50% Fe. Progressively, expanding beneficitation would increase the
effective iron ore resource base, to offset expanding consumption over the next few decades. A determined beginning, therefore, needs to be made in the direction of **concurrently mining of all grades above 55\% Fe occurring in the leasehold of mine operators**, whether in the private or in the public sector or captive mines of steel plants.

Substantial upgrading of lean ores through complex wet beneficiation techniques necessarily requires grinding to very fine sizes to produce concentrates. These concentrates can, under present technology, be used for sponge iron or steel making only through agglomeration as sinter or pellets. Apart from meeting captive requirements of the integrated steel plants, it would be necessary to increase the market availability of such agglomerates produced from such concentrates for all smaller users like sponge iron plants and mini blast furnaces. For various techno-economic reasons, the smaller producers cannot set up their own agglomeration facilities. Depending on relative production and transport costs, locational and other factors, sponge iron plants and other smaller steel producers would find these acceptable substitutes for scarce natural lump ore.
Chapter V.

Chrome Ore and Manganese Ore

5.1.1 Chrome ore: Introduction
Chromite is an oxide of iron and is FeO Cr₂O₃ or FeCr₂O₄ containing 68% Cr₂O₃ and 32% FeO with Cr:Fe ratio of about 1.8:1. Chromite is strictly speaking a chrome spinel and is the only commercial source of chromium. Chromite occurs as a primary mineral of ultra basic igneous rocks and is normally associated with peridotite, pyroxenite, dunite and serpentinite.

5.1.2 Uses
The principal uses of chromite in different industries are broadly classified into three categories viz. (a) Metallurgical (b) Refractory and (c) Chemical.

The chief use of chromite is in metallurgical industry especially in the manufacture of ferro-chrome, silico-chrome, charge-chrome and chromium metal. Chromium is used in metallurgical industry to enhance the properties like harden ability, creep strength and resistance to corrosion, oxidation, wear and galling. In a very few cases, chromite is directly used by the stainless steel industry.

Another major use of chromites is in production of refractory bricks due to its high melting point, moderate thermal expansion and resistant to acids and alkalis. It is used in the form of chrome magnesite bricks or in the open hearth electric arc furnace, cement kilns, glass furnaces and processing industries for non ferrous metals and foundries. Chrome is also used in leather processing and chemical industries.

5.1.3 Chrome ore: Chemistry
Ferro-chrome (ferro-chromium) is produced either by the reduction of chromite in an electric furnace by means of carbon or silicon or by the Thermit Process. In effect, the oxygen is removed from the iron-chromium-oxygen mineral leaving an iron-
chromium alloy, ferro-chromium. Ferro-chromium is an intermediate product used as an additive in making stainless steels and special alloy steels. It is also the source of chromium for ferrous alloys.

5.1.4 Chrome ore: Classification

The ferro-chrome alloy is mainly classified into two types, viz. low carbon ferro-chrome and high carbon ferro-chrome.

Low Carbon ferro-chrome (L.C.F/Cr) – Low carbon ferro-chrome is a very important and strategic alloy required in the production of various heat and corrosion resistant steels, stainless steels and precipitation hardenable stainless steels.

High carbon ferro-chrome (H.C.F/Cr)- The high carbon ferro-chrome finds use in the production of alloy steels resistant to heat, corrosion and oxidation. It increases high temperature strength and improves abrasion resistance in high carbon alloy steels.

A typical high carbon ferro-chrome analyses to 66 to 70% Cr, 5 to 6.5% C and 1 to 2% silicon. Typically, silico-chrome contains 35 to 41% Cr, 39 to 45% silicon and 0.05% carbon.

The price of low carbon ferro-chrome is almost double that of high carbon ferro-chrome. A typical low carbon ferro-chrome contains 67 to 75% Cr, 0.025 to 0.05% C and less than 1% silicon.

A typical charge-chrome or charge grade ferro-chrome contains 50 to 60% Cr, 6 to 8% carbon and 3 to 6% silicon. It is a low chromium high carbon ferro-chrome with higher silicon content used in the manufacture of stainless steel and other alloys and special steels. It is employed just like any other charge such as stainless steel scrap or mild steel scrap in stainless steel production. Hence, it is termed as charge-chrome.

The grades of high carbon and low carbon ferro-chrome and silico-chrome, and charge-chrome produced and marketed by different countries vary from country to country. However, the general
composition of these alloys and BIS specifications are at Table No. 1 & Table No. 2 respectively.

5.1.5 **World Resources**

The world resources are assessed at 7.6 billion tonnes of metal content, which can meet the world demand for centuries. About 77.5% of the world resources are established in South Africa, followed by Zimbabwe (9.6%) and Kazakhstan (5.7%). The world resources of chromite are shown in Table No. 3 & 4.

5.1.6 **Indian Resources**

Chrome ore reserves in India total 114.37 million tones. Lumpy chrome ore reserves constitute only 10% of the total chrome ore reserves in India 98% of deposit in India is in Orissa, 1% in Karnataka. The Orissa, reserves of chrome ore are located in Sukinda Valley & Boula area. In both these areas, chrome ore is extracted by open cast mining. Unless additional reserves are discovered, the reserves will last for 20 years for the existing alloy & stainless steel capacity. For Indian reserves of chromite ore see Table No.5.

5.1.7 **World Production**

The world production of chromite was 14.8 million tonnes in 2003 as compared to 13.9 million tonnes in 2002. South Africa continue to be the leading producer followed by Kazakhstan and India. Other significant producers were Zimbabwe, Finland, Brazil and Turkey. (world production figures are at Table No. 6).

In the year 2002 China followed by Japan was the biggest importer of chrome ores and concentrates, importing 1142740, 354928 tonnes of chrome in that year respectively. India imported in comparison only 1740 tonnes of chrome ore. A detailed world export and imports figures can be seen at Table No. 7 & 8. A graphical representation can be seen at Table No. 8.

5.1.8 **Indian Production**
The production of chromite in India at 3 million tonnes in 2003 was less than 2.8 million tonnes in 2002. Five principal producers, operating eleven mines, together accounted for 90% production during the year. The contribution of fourteen mines, each producing more than 10,000 tonnes per annum, was 99%. Orissa continue to be the major chromite producing state, accounting for 99% production in 2003. Production of chromite from Karnataka and Maharastra was 1%. For all India production of chrome ore see Table No. 9

5.1.9 Export of Chrome ore from India

Although India has less than 1% of the world known reserves of chrome ore, its share of the global chrome ore trade is a highly disproportionate 35%. The current export policy on chromite ore may be seen at Table No. 10.

5.1.10 Export Price of Chrome ore.

The chrome export prices have been fluctuating hugely from US $ 68 per tonne quarter of financial year 2001-02, to US $ 249 per tonne first and second quarter of current financial year (for 54/52%). Similarly for 52/50% the export prices have fluctuated between US $ 64 in fourth quarter of 2000-01 to US $ 240 in first and second quarter of current financial year. Detailed chrome export prices from first quarter of 1996 to second quarter of 2005 can be seen at Table No. 11. A detailed grade wise port wise export of chrome ore of India can be seen at Table No.12.

5.1.11 Trades & Issues

A comparison of the cost of mining with the net realizations from exports at these prices reveals windfall profits by a handful of India chrome exporters, at the cost of conservation of a scarce non-renewable mineral resource. Though India has less than 1% of the world known reserves of chrome ore, its share of the global chrome ore trade is highly disproportionate 35%. In India five principal producers-M/s. TISCO, M/s. Orissa Mining Corporation Ltd., Balasore Alloys Ltd., Ferro Alloys Corporation Ltd. Jindal Strips Ltd. account for over 90% of production. Usage of stainless steel is growing in the
world. India currently produces 1 million tonnes of stainless steel. For this production five lakh tonnes of chrome will be required per annum. At this rate given the total resources of chrome ore the same would last barely 20 years. Thus there is an urgent need to beneficiate low grade chrome ore now rather than wait for the reserves to get over and then resort to beneficiation. In view of the very limited reserves of high grade chrome ore, it appears essential to restrict exports of such natural ore which is much in demand by domestic steel and alloy makers. Simultaneously, exports of beneficiated ore must be confined exclusively to concentrates produced by genuine beneficiation of low grade ores which are not directly usable at all, say below 38% CR2O3.

5.1.12

In keeping with the purposes of MMDR Act, and as in the case of iron ore, domestic plants requiring chrome ore for production of value added ferro alloys/chromium steels must be given absolute preference in grant of chromium leases.

5.1.13

Considering the relatively small area in Orissa where almost all currently known reserves of high quality chrome ore are confined, inter-se demarcation of the handful leases in Sukinda Valley should be done very carefully keeping in mind contiguity and other geological mining and technical considerations in relation to configuration of the ore bodies, in order to facilitate total extraction of metallic value by lessees. These handful of lease holders need also to be persuaded to implement accelerated and time bound investigation programmes to prove with full configuration and reserves in their respective lease areas, and possible extensions beyond.

5.1.14

Side by side, major thrust needs to be given for systematic exploration and proving operations for discovering additional resources of chrome ore, particularly, in the possible extensions of the ultramafic belt in Orissa. There are large areas presently reserved for exploration by the State public sector in Orissa. While Orissa Mining
Corporation etc. should be encouraged to maximize their own prospecting and mining operations for chrome ore, at the same time, it is essential to bring in the resources of private sector applicants to contribute to augmentation of the overall reserves position. After retaining under reservation of such areas where the public sector companies have time bound exploration programmes, other large areas presently under reservation should be thrown open to competent PL/ML applicants in terms of the provisions of the Act.

5.1.15 Beneficiation

Beneficiation with the objective of mineral conservation is aimed at upgrading low grade ore for domestic use. At present the export of virgin chrome ore is canalized through MMTC and subject to an overall ceiling. This is neither canalization nor any limit if it is claimed that beneficiation has taken place. This has led to rampant misuse.

5.1.16 Conclusion

Various aspects of the Chrome Ore resources, mining, exports and domestic consumption have been studied by a number of Inter-Ministerial committees over the years; including, lastly, the Expert Committee – June, 2001 chaired by Indian Bureau of Mines. These committees have done an excellent job of putting together in one place all relevant information and data. The Group of Experts has, therefore, made full use of this reliable and authentic information, with some supplementing from other sources.

5.1.17 The Scheme of Preferences Priority A-I & A-II and related Recommendations at B.I and VI however, represent the views of the Expert Group with regard to Chrome Ore mining lease policy and related matters. As mentioned elsewhere, the question of inter se priorities in grant of leases for Chrome Ore is inherently linked to the question of production of value added manufactures (e.g. ferro alloys), conservation, beneficiation and geological investigations by lessees and availability for domestic users in relation to exports etc.

5.1.18 As mentioned in 5.1.16 above, medium and high grade Chrome Ore reserves confined mainly to Sukinda valley/Boula in Orissa may not be lost beyond 20 years even for existing users. With only 1% of the
world reserves, Indian Chrome Ore exports are presently a highly disproportionate 35% of world trade. This is clearly an aberration caused by large profit margins between cost of mining and net export realization. **Exports of natural chrome ore need to be stopped altogether.**

5.1.19 Side by side, there is an urgent need to put through **accelerated time bound geological investigations to prove the entire extent of known ore bodies and look for additional ore bodies** in new areas through intensified prospecting operations. This would require deresorvation of such areas which are presently reserved for Orissa Mining Corporation but which OMC cannot themselves systematically cover within a reasonable time.

5.1.20 Export of beneficiated low grade ore is permitted under ceilings linked to capacity of the beneficiation plants. Keeping in view reported diversion of natural ores to exports by this route, side by side with technological and monitoring considerations, it is necessary to keep the upper limit of feed grade for beneficiation at 38% Cr₂O₃ and **strengthen the monitoring machinery to restrict exports to only such genuinely beneficiated ore concentrates.**

5.1.21 in the matter of grant of leases and within the availability of reserves, overriding priority, as in the case of iron ore, needs to be given **for the long term requirements of existing or operating ferro alloy plants** which have been located based on Sukinda valley chrome ore. To the extent that residual reserves ores are or may become available, they also should be preferentially given for raw material requirements of brownfield expansion or Greenfield ferro alloy plants producing value added products. The arguments that it may be more economic to export chrome ore for conversion to value added product abroad due to high domestic cost of electric energy has some economic validity from the point of view of individual entrepreneur but this question is best left to be decidedly market forces; since even the availability and cost of chrome ore may be lower in other countries.
### Table No-1

**COMPOSITION OF FERRO-CHROME ALLOYS**

<table>
<thead>
<tr>
<th>Constituent</th>
<th>L.C.F.Cr</th>
<th>H.C.F.Cr</th>
<th>Si-Cr</th>
<th>Charge-chrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium(Cr)</td>
<td>65 to 75%</td>
<td>60 to 72%</td>
<td>35 to 41%</td>
<td>50 to 60%</td>
</tr>
<tr>
<td>Carbon (C)</td>
<td>0.1% (max)</td>
<td>4 to 6%</td>
<td>0.1% (max)</td>
<td>6 to 8%</td>
</tr>
<tr>
<td>Silicon (Si)</td>
<td>1.5% (max)</td>
<td>2% (max)</td>
<td>39 to 45%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Sulphur (S)</td>
<td>0.025% (max)</td>
<td>0.04% (max)</td>
<td>-</td>
<td>0.04% (max)</td>
</tr>
<tr>
<td>Phosphorous (P)</td>
<td>0.3% (max)</td>
<td>0.03% (max)</td>
<td>-</td>
<td>0.03% (max)</td>
</tr>
</tbody>
</table>

**Source:** Report of the Expert Committee for Reassessment of Resources of Chromite in India, January, 1990, Ministry of Steel, Government of India
Table No.2

BIS Specifications of Chromite for Metallurgical Industry (IS:10818-1984)
(Reaffirmed in 1998)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Characteristics (on dry basis)</th>
<th>Grade(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low carbon ferro-chrome</td>
</tr>
<tr>
<td>1</td>
<td>Cr$_2$O$_3$ percent, min</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>Total iron percent, max.(as FeO)</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Al$_2$O$_3$ percent</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>SiO$_2$ percent max.</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>CaO percent,max.</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>MgO percent max.</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>Sulphur* (as SO$_3$) percent,min.</td>
<td>0.1</td>
</tr>
<tr>
<td>8</td>
<td>Phosphorous(as P$_2$O$_5$) percent,max.</td>
<td>0.005</td>
</tr>
<tr>
<td>9</td>
<td>Cr.Fe, min.</td>
<td>3:1</td>
</tr>
<tr>
<td>10</td>
<td>MgO:Al$_2$O$_3$ (range )</td>
<td>-</td>
</tr>
</tbody>
</table>
# Table No. 3

**WORLD RESERVES OF CHROME ORE**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>NAME OF COUNTRY</th>
<th>QUANTITY (QTY. IN MILLION TONNES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SOUTH AFRICA</td>
<td>8600</td>
</tr>
<tr>
<td>2.</td>
<td>ZIMBABWE</td>
<td>1070</td>
</tr>
<tr>
<td>3.</td>
<td>KAZAKSTAN</td>
<td>640</td>
</tr>
<tr>
<td>4.</td>
<td>RUSSIA</td>
<td>464</td>
</tr>
<tr>
<td>5.</td>
<td>INDIA</td>
<td>110</td>
</tr>
<tr>
<td>6.</td>
<td>FINLAND</td>
<td>84</td>
</tr>
<tr>
<td>7.</td>
<td>OTHERS</td>
<td>67</td>
</tr>
<tr>
<td>8.</td>
<td>BRAZIL AND TURKEY</td>
<td>28</td>
</tr>
<tr>
<td>9.</td>
<td>ALBANIA</td>
<td>12</td>
</tr>
<tr>
<td>10.</td>
<td>UNITED STATES</td>
<td>10</td>
</tr>
<tr>
<td>11.</td>
<td>IRAN</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>11068</strong></td>
</tr>
</tbody>
</table>

Sources: IBM
### Table No. 4

**ALL INDIA CHROMITE RESERVES**

*(AS ON 1.4.2000)*

*(QUANTITY IN ‘000 TONNES)*

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>BY GRADES</th>
<th>PROVED</th>
<th>PROBABLE</th>
<th>POSSIBLE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>METALLURGICAL</td>
<td>9508.61</td>
<td>4203.92</td>
<td>2377.07</td>
<td>16089.6</td>
</tr>
<tr>
<td>2.</td>
<td>REFRACTORY</td>
<td>523.1</td>
<td>683.27</td>
<td>737.64</td>
<td>1944.01</td>
</tr>
<tr>
<td>3.</td>
<td>CHARGE CHROME</td>
<td>17712.2</td>
<td>9455.51</td>
<td>4759.65</td>
<td>31927.36</td>
</tr>
<tr>
<td>4.</td>
<td>LOW</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>5.</td>
<td>BENEFICIABLE</td>
<td>9352.81</td>
<td>11572.96</td>
<td>9654.41</td>
<td>30580.18</td>
</tr>
<tr>
<td>6.</td>
<td>OTHERS</td>
<td>0</td>
<td>14.97</td>
<td>0.4</td>
<td>15.37</td>
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<tr>
<td>7.</td>
<td>UNCLASSIFIED</td>
<td>45.06</td>
<td>1480.69</td>
<td>10977.71</td>
<td>12503.46</td>
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<tr>
<td>8.</td>
<td>NOT KNOWN</td>
<td>19.29</td>
<td>21120.00</td>
<td>161</td>
<td>21300.29</td>
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<tr>
<td><strong>ALL INDIA</strong></td>
<td><strong>37161.07</strong></td>
<td><strong>48531.32</strong></td>
<td><strong>28681.88</strong></td>
<td><strong>114374.27</strong></td>
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</tr>
</tbody>
</table>

### Table No. 5

World production of chromium ores and concentrates *(By Principal Countries)*

*(In ‘000 Tonnes)*

<table>
<thead>
<tr>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>129</td>
<td>72</td>
<td>98</td>
</tr>
<tr>
<td>Brazil</td>
<td>418</td>
<td>279</td>
<td>390</td>
</tr>
<tr>
<td>Finland</td>
<td>575</td>
<td>566</td>
<td>549</td>
</tr>
<tr>
<td>India</td>
<td>1677</td>
<td>2698</td>
<td>2210</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>2056</td>
<td>2349</td>
<td>2781</td>
</tr>
<tr>
<td>South Africa</td>
<td>5616</td>
<td>6372</td>
<td>7136</td>
</tr>
<tr>
<td>Turkey</td>
<td>368</td>
<td>313</td>
<td>229</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>727</td>
<td>734</td>
<td>666</td>
</tr>
<tr>
<td>Other Countries</td>
<td>605</td>
<td>614</td>
<td>809</td>
</tr>
<tr>
<td><strong>World : Total</strong></td>
<td><strong>12171</strong></td>
<td><strong>13997</strong></td>
<td><strong>14868</strong></td>
</tr>
<tr>
<td>--------</td>
<td>-----------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>1.</td>
<td>UNITED STATES</td>
<td>12772</td>
<td>47344</td>
</tr>
<tr>
<td>2.</td>
<td>ALBANIA</td>
<td>83100</td>
<td>95600</td>
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<tr>
<td>3.</td>
<td>BRAZIL</td>
<td>36130</td>
<td>156373</td>
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<td>4.</td>
<td>FINLAND</td>
<td>1101</td>
<td>694</td>
</tr>
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<td>5.</td>
<td>INDIA</td>
<td>308267</td>
<td>490212</td>
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<td>6.</td>
<td>IRAN</td>
<td>73600</td>
<td>244300</td>
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<tr>
<td>7.</td>
<td>KAZAKSTAN</td>
<td>373126</td>
<td>450400</td>
</tr>
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<td>8.</td>
<td>RUSSIA</td>
<td>25000</td>
<td>27800</td>
</tr>
<tr>
<td>9.</td>
<td>SOUTH AFRICA</td>
<td>983656</td>
<td>903308</td>
</tr>
<tr>
<td>10.</td>
<td>TURKEY</td>
<td>321818</td>
<td>601100</td>
</tr>
<tr>
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<td>ZIMBABWE</td>
<td>47</td>
<td>90</td>
</tr>
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<td>12.</td>
<td>PAKISTAN</td>
<td>27997</td>
<td>7263</td>
</tr>
<tr>
<td>13.</td>
<td>MADAGASCAR</td>
<td>137800</td>
<td>74200</td>
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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1.</td>
<td>ITALY</td>
<td>143716</td>
<td>102366</td>
<td>204345</td>
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<td>105047</td>
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<td>41184</td>
<td>60566</td>
<td>8279</td>
<td>56835</td>
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<td>2.</td>
<td>GERMANY</td>
<td>205765</td>
<td>172534</td>
<td>159793</td>
<td>177909</td>
<td>180312</td>
<td>201728</td>
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<td>119869</td>
<td>130485</td>
<td>114806</td>
</tr>
<tr>
<td>3.</td>
<td>NORWAY</td>
<td>130000</td>
<td>141000</td>
<td>108000</td>
<td>100000</td>
<td>-</td>
<td>425000</td>
<td>468000</td>
<td>282000</td>
<td>186000</td>
<td>28000</td>
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<tr>
<td>4.</td>
<td>SWEDEN</td>
<td>254126</td>
<td>374426</td>
<td>294600</td>
<td>300000</td>
<td>-</td>
<td>319000</td>
<td>250000</td>
<td>350000</td>
<td>200000</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>U.K.</td>
<td>128409</td>
<td>151563</td>
<td>166633</td>
<td>176199</td>
<td>157914</td>
<td>120967</td>
<td>83608</td>
<td>163647</td>
<td>135369</td>
<td>139721</td>
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<tr>
<td>6.</td>
<td>USA</td>
<td>254802</td>
<td>201273</td>
<td>251359</td>
<td>251160</td>
<td>303598</td>
<td>380788</td>
<td>228958</td>
<td>267792</td>
<td>189101</td>
<td>111903</td>
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<td>7.</td>
<td>JAPAN</td>
<td>601629</td>
<td>664545</td>
<td>687268</td>
<td>686451</td>
<td>577402</td>
<td>416665</td>
<td>380115</td>
<td>501727</td>
<td>411120</td>
<td>265926</td>
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<td>8.</td>
<td>CHINA</td>
<td>618757</td>
<td>651001</td>
<td>138035</td>
<td>794377</td>
<td>894001</td>
<td>711544</td>
<td>816230</td>
<td>1112791</td>
<td>100441</td>
<td>1142740</td>
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<tr>
<td>9.</td>
<td>NETHERLAND</td>
<td>29944</td>
<td>32858</td>
<td>47695</td>
<td>69338</td>
<td>57589</td>
<td>61785</td>
<td>38827</td>
<td>55178</td>
<td>73730</td>
<td>62992</td>
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<tr>
<td>10.</td>
<td>INDIA</td>
<td>143</td>
<td>153</td>
<td>226</td>
<td>170</td>
<td>-</td>
<td>686</td>
<td>6886</td>
<td>54567</td>
<td>1153</td>
<td>1740</td>
</tr>
</tbody>
</table>

SOURCE : FIMI
Table No. 7

Table No. 8
### ALL INDIA PRODUCTION OF CHROME ORE

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PRODUCTION</th>
<th>Qty. in million tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996-1997</td>
<td>1.45</td>
<td></td>
</tr>
<tr>
<td>1997-1998</td>
<td>1.51</td>
<td></td>
</tr>
<tr>
<td>1998-1999</td>
<td>1.41</td>
<td></td>
</tr>
<tr>
<td>1999-2000</td>
<td>1.73</td>
<td></td>
</tr>
<tr>
<td>2000-2001</td>
<td>1.95</td>
<td></td>
</tr>
<tr>
<td>2001-2002</td>
<td>1.45</td>
<td></td>
</tr>
<tr>
<td>2002-2003</td>
<td>2.88</td>
<td></td>
</tr>
<tr>
<td>2003-2004</td>
<td>3.00</td>
<td></td>
</tr>
</tbody>
</table>

Source: IBM

### CHROMITE ORE

<table>
<thead>
<tr>
<th>No.</th>
<th>ITEM</th>
<th>Ceiling (in lakh tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Low silica friable/fine chromite ore with Chromium oxide in the range 52-54% and Silica exceeding 4%</td>
<td>0.40</td>
</tr>
<tr>
<td>ii)</td>
<td>Low Silica friable/fine chromite ore with chromium oxide not exceeding 52% and silica exceeding 4%</td>
<td>3.60</td>
</tr>
<tr>
<td></td>
<td>and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chromite lumps containing chromium oxide not exceeding 40%</td>
<td></td>
</tr>
<tr>
<td>iii)</td>
<td>Beneficiated Chromite concentrates (maximum feed grade to be less than 42% Cr203).</td>
<td>No ceiling</td>
</tr>
</tbody>
</table>
Table No. 10

India Chrome export prices from 1<sup>st</sup> Qtr. 1996 to 2<sup>nd</sup> Qtr. 2005

<table>
<thead>
<tr>
<th>Year/Quarters</th>
<th>Friable Chrome Ore (FOB US$/DMT) PARADIP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>54/52%</td>
</tr>
<tr>
<td>FY96Q1</td>
<td>160.00</td>
</tr>
<tr>
<td>FY96 Q2</td>
<td>160.00</td>
</tr>
<tr>
<td>FY96 Q3</td>
<td>125.00</td>
</tr>
<tr>
<td>FY96 Q4</td>
<td>125.00</td>
</tr>
<tr>
<td>FY97 Q1</td>
<td>128.00</td>
</tr>
<tr>
<td>FY97 Q2</td>
<td>128.00</td>
</tr>
<tr>
<td>FY97 Q3</td>
<td>128.00</td>
</tr>
<tr>
<td>FY97 Q4</td>
<td>111.00</td>
</tr>
<tr>
<td>FY98 Q1</td>
<td>111.00</td>
</tr>
<tr>
<td>FY98 Q2</td>
<td>111.00</td>
</tr>
<tr>
<td>FY98 Q3</td>
<td>111.00</td>
</tr>
<tr>
<td>FY98 Q4</td>
<td>74.00</td>
</tr>
<tr>
<td>FY99 Q1</td>
<td>69.50</td>
</tr>
<tr>
<td>FY99 Q2</td>
<td>69.50</td>
</tr>
<tr>
<td>FY99 Q3</td>
<td>69.50</td>
</tr>
<tr>
<td>FY99 Q4</td>
<td>69.00</td>
</tr>
<tr>
<td>FY2000 Q1</td>
<td>74.00</td>
</tr>
<tr>
<td>FY2000 Q2</td>
<td>74.00</td>
</tr>
<tr>
<td>FY2000 Q3</td>
<td>74.00</td>
</tr>
<tr>
<td>Jan-Feb-01 Q4</td>
<td>69.00</td>
</tr>
<tr>
<td>Mar-April-01 Q4</td>
<td>64.00</td>
</tr>
<tr>
<td>May-June-01 Q1</td>
<td>64.00</td>
</tr>
<tr>
<td>FY2001 Q2</td>
<td>68.00</td>
</tr>
<tr>
<td>FY2001 Q3</td>
<td>66.00</td>
</tr>
<tr>
<td>FY2001 Q4</td>
<td>66.00</td>
</tr>
<tr>
<td>FY2002 Q1</td>
<td>64.00</td>
</tr>
<tr>
<td>FY2002 Q2</td>
<td>64.00</td>
</tr>
<tr>
<td>FY2002 Q3</td>
<td>57.00</td>
</tr>
<tr>
<td>FY2002 Q4</td>
<td>57.00</td>
</tr>
<tr>
<td>FY2003 Q1</td>
<td>67.00</td>
</tr>
<tr>
<td>FY2003 Q2</td>
<td>82.00</td>
</tr>
<tr>
<td>FY2003 Q3</td>
<td>0.00</td>
</tr>
<tr>
<td>FY2003 Q4</td>
<td>225.00</td>
</tr>
<tr>
<td>FY2004 Q1</td>
<td>225.00</td>
</tr>
<tr>
<td>FY2004 Q2</td>
<td>200.00</td>
</tr>
<tr>
<td>FY2004 Q3</td>
<td>185.00</td>
</tr>
<tr>
<td>FY2004 Q4</td>
<td>0.00</td>
</tr>
<tr>
<td>FY2005 Q1</td>
<td>249.00</td>
</tr>
<tr>
<td>FY2005 Q2</td>
<td>249.00</td>
</tr>
</tbody>
</table>
INDIA - GRADEWISE AND PORTWISE EXPORT OF CHROME ORE

*QTY. IN LAKH MT*

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PARADIP PORT</th>
<th>N. MGLORE PORT</th>
<th>CHROME ORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>54/52% Friable</td>
<td>52/50% Friable</td>
<td>50/48% Friable</td>
</tr>
<tr>
<td>1996-1997</td>
<td>-</td>
<td>0.39</td>
<td>0.99</td>
</tr>
<tr>
<td>1997-1998</td>
<td>-</td>
<td>0.61</td>
<td>0.71</td>
</tr>
<tr>
<td>1998-1999</td>
<td>-</td>
<td>0.36</td>
<td>0.27</td>
</tr>
<tr>
<td>1999-2000</td>
<td>-</td>
<td>0.20</td>
<td>3.28</td>
</tr>
<tr>
<td>2000-2001</td>
<td>-</td>
<td>0.36</td>
<td>2.24</td>
</tr>
<tr>
<td>2001-2002</td>
<td>-</td>
<td>0.76</td>
<td>1.48</td>
</tr>
<tr>
<td>2002-2003</td>
<td>-</td>
<td>0.56</td>
<td>3.30</td>
</tr>
<tr>
<td>2003-2004</td>
<td>-</td>
<td>0.11</td>
<td>3.64</td>
</tr>
<tr>
<td>2004-2005</td>
<td>0.01</td>
<td>0.15</td>
<td>3.76</td>
</tr>
</tbody>
</table>
Manganese Ore

Chapter 5.2

5.2.1 Occurrence & Usage:

Manganese ore is an important material in iron and steel metallurgy where it is used both in the ore form as such and as ferromanganese. Manganese ore improves strength, toughness, hardness, and workability of steel. It acts as deoxidiser and desulphuriser, and also helps in getting ingots free from blowholes. Manganese is introduced in steel generally in the form of iron-manganese alloys, ferro-manganese and silico-manganese. There is no satisfactory substitute for it in the making of steel in which it is present in percentage varying from 0.5 to 0.95 i.e. about 5.5 Kg to 6.5 Kg in every tonne of steel made. Manganese dioxide is used for manufacturing dry cell batteries in which it functions as a depolarizer of hydrogen. Manganese sulphide is used in the manufacture of salts and in calico printing. Manganese chloride is used in cotton textile as a bronze dye. Manganese slats are used in photography and in leather and match-box industries. Pyrolusite is used generally used to impart glaze to the pottery and to make colored bricks. It also finds use as driers for oils, varnishes and paints.

5.2.2 By far, the largest manganese reserves are in South Africa, in Kalahari area. Other large manganese deposits in Australia, Gabon, and Brazil have 44-50% manganese and are smaller in magnitude than the South African deposits. Only a small fraction of global manganese reserves are clearly economic under present conditions (see Table below).

<table>
<thead>
<tr>
<th>Country</th>
<th>Reserve base</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Total</td>
<td>5000000</td>
</tr>
<tr>
<td>Australia</td>
<td>72000</td>
</tr>
<tr>
<td>Brazil</td>
<td>51000</td>
</tr>
<tr>
<td>China</td>
<td>100000</td>
</tr>
<tr>
<td>Gabon</td>
<td>160000</td>
</tr>
<tr>
<td>India</td>
<td>50000</td>
</tr>
<tr>
<td>Mexico</td>
<td>9000</td>
</tr>
<tr>
<td>South Africa</td>
<td>4000000</td>
</tr>
<tr>
<td>Ukraine</td>
<td>520000</td>
</tr>
<tr>
<td>Other Countries</td>
<td>Small</td>
</tr>
</tbody>
</table>

Source: Mineral Commodity Summaries, 2001
World production of Ferro manganese and silico manganese has gone up from 6.6 million tonnes in 1999 to 8.54 million tonnes in 2003. (see Table-below)

<table>
<thead>
<tr>
<th>Country</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>214,000</td>
<td>250,000</td>
<td>250,000</td>
<td>250,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Brazil</td>
<td>226,822</td>
<td>295,581</td>
<td>276,251</td>
<td>329,200</td>
<td>325,000</td>
</tr>
<tr>
<td>China</td>
<td>1,920,000</td>
<td>1,920,000</td>
<td>2,340,000</td>
<td>2,570,000</td>
<td>3,050,000</td>
</tr>
<tr>
<td>France</td>
<td>495,000</td>
<td>500,000</td>
<td>480,000</td>
<td>480,000</td>
<td>407,000</td>
</tr>
<tr>
<td>India</td>
<td>350,000</td>
<td>345,000</td>
<td>315,000</td>
<td>315,000</td>
<td>325,000</td>
</tr>
<tr>
<td>Indonesia</td>
<td>19,000</td>
<td>19,000</td>
<td>19,000</td>
<td>19,000</td>
<td>19,000</td>
</tr>
<tr>
<td>Japan</td>
<td>380,896</td>
<td>405,620</td>
<td>430,531</td>
<td>427,682</td>
<td>435,000</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>78,495</td>
<td>103,794</td>
<td>146,549</td>
<td>166,278</td>
<td>180,851</td>
</tr>
<tr>
<td>Russia</td>
<td>55,000</td>
<td>55,000</td>
<td>55,000</td>
<td>55,000</td>
<td>55,000</td>
</tr>
<tr>
<td>World Total</td>
<td>6,630,000</td>
<td>7,250,000</td>
<td>7,480,000</td>
<td>7,930,000</td>
<td>8,540,000</td>
</tr>
</tbody>
</table>

Source: USGS

5.2.3 Indian Reserves:

Total insitu reserves of manganese ore in India (as on 01.04.2000) are placed at 406 million tones comprising 104 million tones in the proved category, 135 million tones in the probable category and the remaining 167 million tones in the possible category. Of the total battery grade constitutes about 2.00 million tones, ferro-managanese grade 32 million tones, medium grade 45 million tones, blast furnace grade 151 million tones and the mixed and unclassified grades constitutes the remaining 176 million tones.

By States, Orissa with 116 million tones accounts for about 29% of the total insitu reserves followed by Karnataka 28% (112 million tones) Goa 12% (30 million tones ) Madhya Pradesh 11% (44 million tones)Maharashtra 7% (30 million tonne) Jharkand 7% (30 MT) The remaining is shared by Andhra Pradesh, Gujrat, Rajasthan and West Bengal.
5.2.5 Structure of Manganese Ore Mines in India:

There were 125 reporting mines (18 in Public Sector and 107 in Private Sector) in 2002-03 as against 131 in the previous year. Six principle producers of manganese ore as given below contributed 84% production:

<table>
<thead>
<tr>
<th>Name of producer</th>
<th>Location of Mine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managnese Ore (India)Ltd</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>Tata Iron &amp; Steel Co. Ltd</td>
<td>Orissa</td>
</tr>
<tr>
<td>Mangilala Rungta</td>
<td>Orissa</td>
</tr>
<tr>
<td>Orissa Mineral Development Co. Ltd.</td>
<td>Orissa</td>
</tr>
<tr>
<td>Orissa Mining Corporation Ltd.</td>
<td>Orissa</td>
</tr>
</tbody>
</table>

5.2.6 Manganese ore production in India:

The production of manganese ore at 2 million tonnes in 2004-05 was the highest in last 35 years in India. In 2003-04 the production was 1.74 million tonnes (see Table-I & II with graphs for details)

5.2.7 Orissa continued to be the leading producing States accounting for 37% production in 2002-03. Next in the order of production were Maharashtra (24%), Madhya Pradesh (20%) and Karnataka (13%). The remaining 6% production was reported by Andhra Pradesh, Goa and Jharkhand.

5.2.8 Consumption pattern:
Consumption of manganese in various industries is given below:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All Industry</td>
<td>935240</td>
<td>888940</td>
<td>794640</td>
</tr>
<tr>
<td>Alloy Steel</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Battery</td>
<td>24600</td>
<td>24400</td>
<td>24400</td>
</tr>
<tr>
<td>Chemical</td>
<td>3000</td>
<td>2800</td>
<td>2500</td>
</tr>
<tr>
<td>Ferro alloys</td>
<td>583400</td>
<td>508700</td>
<td>507500</td>
</tr>
<tr>
<td>Iron &amp; Steel</td>
<td>322000</td>
<td>350800</td>
<td>258200</td>
</tr>
<tr>
<td>Zinc smelters</td>
<td>2000</td>
<td>2000</td>
<td>1800</td>
</tr>
<tr>
<td>Others</td>
<td>140</td>
<td>140</td>
<td>140</td>
</tr>
</tbody>
</table>
5.2.9 Manganese Mines in India are mainly concentrated in two separate regions. The large but depleting mines of Maharashtra – Madhya Pradesh belt characterized by mid-size deposits of higher manganese content but accompanied by higher content of deleterious phosphorous.

The second major group comprises smaller, fragmented and lower Manganese grade mines of Orissa – Jharkhand area. This belt has, however, lower phosphorous content.

5.2.10 In the Western sector, by far, the bulk of production is by the Public Sector i.e. MOIL, with smaller private lessee showing little production. In the Eastern sector also major producers are mainly in the Public Sector, i.e., Orissa Mining Corporation, Orissa Mineral Development Corporation and SAIL, in addition to a couple of medium private sector operators.

5.2.11 Use of Ferro Manganese in steel plants is progressively coming down worldwide and along with it the demand for manganese from erstwhile importers. In fact, some imports are now reported to have taken place in 2004.

5.2.12 In view of the occurrence and accumulation of large proportions of low grade Manganese ore in the Eastern sector, more effective measures need to be implemented to undertake beneficiation to improve Mn grade. The State Department of Mining & Geology, in consultation with IBM and RRL should promote commercial scale beneficiation projects, taking advantage of pilot plant ore dressing tests conducted by IBM & RRL over the years.

5.2.13 There are hardly any known large potential Manganese bearing areas available for grant of lease. However, in the event that new deposits of significant size, say, 1 million tonne or above, are discovered, Preference should be given to one of the existing public sector agencies for Grant of Lease for such deposits. In respect of smaller deposits or stray occurrences in any sector, there is no need for any Special preferences. Grant of PL/ML should be guided by other provisions of the MMDR Act.
### Table 3

#### Export Policy

The Export Policy, 2002-07 made effective from 1st April, 2002 is follows:

<table>
<thead>
<tr>
<th>Item description</th>
<th>Policy</th>
<th>Nature of restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese ores excluding the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lumpy/blended manganese ore with more than 46% Mn.</td>
<td>STE</td>
<td>Export through</td>
</tr>
<tr>
<td></td>
<td>(a) MMTC</td>
<td>MMTC</td>
</tr>
<tr>
<td></td>
<td>(b) MOIL for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manganese ore produced in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moil Mines</td>
<td></td>
</tr>
<tr>
<td>Lumpy/blended manganese ore containing more than 46% under licence</td>
<td>Expert permitted</td>
<td></td>
</tr>
</tbody>
</table>

The export policy of manganese ore is decided keeping in view the need for conserving high grade ores. Efforts is also made to replace the export of ores by export of value added items. For 2001-02, the maximum ceiling of manganese are allowed for export is as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Ceiling (in lakh tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Medium grade manganese ore/blended ore containing 46-49% Mn only with not less than 0.24% P</td>
<td>0.25</td>
</tr>
<tr>
<td>ii)</td>
<td>Medium grade manganese ore/blended ore containing 38 to 46% Mn and more than 0.10P</td>
<td>1.25</td>
</tr>
<tr>
<td>iii)</td>
<td>Low grade manganese ore/blended ore containing less than 38% Mn</td>
<td>4.00</td>
</tr>
<tr>
<td>iv)</td>
<td>Manganese ore fines below 12 mm containing less than 44% Mn.</td>
<td>1.50</td>
</tr>
</tbody>
</table>
CHAPTER - VI

Recommendations on National Guidelines for Mining Leases – Iron Ore & Chrome Ore

RATIONALE FOR PREFERENCES

6.1 In pursuit of the national goal of rapid industrialization, creation of wealth, enhancement of living standards and achieving economic strength in keeping with India’s size and population, optimum utilization of the country’s natural resources is of unquestionable importance. Steel is still the most important and critical requirement in the development of infrastructure, industry and manufacturing; even though progressive in roads are being made by substitutes like Aluminum, Plastic and Ceramics. Production of steel commensurate with our geographical size, population and developmental goals has to be given highest strategic priority. The present per capita consumption of 31 kgs has to increase to at least 80 kgs. by 2020 and perhaps 300 kgs. by 2050, as against present world average of 150 kgs. and US consumption of 350 kgs.

6.2 For production of steel by conventional Blast Furnace process, the production of coking coal in India is much below requirements. India is also faced with the daunting prospect of inadequate petroleum reserves and escalating world prices. For various reasons, the cost of energy and capital in India are much higher than in some other steel producing countries. India is, however, endowed with rich resources of iron ore of high quality. This is one of our major strengths for globally competitive production of steel. Every care has to be taken in the national interest to preserve and leverage to the maximum this natural advantage by rapidly building up a strong world class steel industry as the bed rock for industrialization and manufacturing, paralleling the rapid expansion and success of the service sector in software and BPO outsourcing.

6.3 During 2004-05, 78 million tonnes of iron ore was exported (70% to China) earning $ 4 billion or thereabouts. Export of its steel equivalent of 50 million tonnes would have earned 20-25 $ billion. Total Indian exports in 2004-05 are estimated at $ 79.2 billion and our net import of POL at around $ 21 billion. During the last 3 decades, cumulative exports of iron ore were over 1 billion tonnes of mostly high grade ore for a total earning of perhaps $ 30 billion.

6.4 The country’s natural advantage of rich iron ore reserves must not be frittered away by continued positioning as a raw material supplier to the developed
world and now, even to rapidly industrialising China. Nothing should be allowed to shift focus from or delay our attaining our rightful place as a major producer of steel and manufacturing in keeping with our size, population and resources. With growing industrialization and manufactures, production of steel and downstream products is clearly at a take-off point. Our iron ore reserves of all grades need to be channelised into steel production, with exports of iron ore a secondary activity, diminishing in inverse proportion to increasing steel production and consumption.

6.5 The entire exercise undertaken by the Export Group as well as formulation of guidelines for the **SCHEME OF PREFERENCES** in the matter of grant of leases, and other observations and recommendations are customized to this strategy.

6.6 Any departure from the principles of natural justice and first-come-first served, as enshrined, inter alia, in the MMDR Act, has to be based on larger public interest and in consonance with, though not limited, to the matters specified in Section 11(3)(a) to (d) of the Act, by making use of specific provisions contained in Section 11(3)(e) “such other matters as may be prescribed.”

6.7 The **SCHEME OF PREFERENCES** recommended, hereinafter, is designed to make concrete elaboration u/s 11(5) in terms of Section 11(3)(e) specific to the rapid and orderly growth of the steel industry and **limited to the three ferrous mineral i.e. iron ore, manganese ore and chrome ore** which are critical inputs.

**Basis for Preferences**

6.8 The proposed **SCHEME OF PREFERENCES** is designed to sub-serve the following main objectives:-

(1) Provide proximate and strategic security of these critical raw material for

   (a) Existing and under commissioning steel capacities and for

   (b) Rapid and orderly growth of a globally competitive Indian steel industry.

(2) Promote globally comparable best practices in (iron ore, chrome ore and manganese ore) mines for optimizing extraction of metallic values from mined material, minimizing waste and rehabilitating post-mining
environment, with a view to long term strategic conservation of metallic content for future needs for sustainable development.

(3) Encourage efficient, scientific, sustainable and globally competitive mining practices, with utmost care for preservation and enhancement of the environment and natural bio-diversity.

6.9 The Preferences are based on multiple levels of interaction by the Expert Group with representatives from a large cross sections of steel makers, mine operators and technologists in the mineral and metallic industries, and endeavour to incorporate relevant available technical knowledge and information at this point of time.

6.10 The very concept of enunciating a Preferential Schedule cannot be disassociated from the requirement of ensuring implementation of the conditionalities which **alone justify and are the very essence of according preference** to one party over another. The conditionalities are therefore incorporated as part and parcel of the preferences.

6.11 Special care has to be taken to ensure that such a scheme of preferences does not become an opportunity for anyone to lock up mineral reserves and disrupt the existing widely dispersed and well managed private sector iron ore mines.

6.12 The effective implementation and fulfillment of the stipulated conditionalities will require elaborate exercises in order to construct tenable legal protocols, structure appropriate reporting and monitoring mechanisms etc. This is not within the scope of the present limited exercise.

6.13 The proposed set of Preferences is based on the following broad considerations of national interest:-

(i) The existing public sector integrated steel plants represent massive investments of public money already made. It is of highest priority to safeguard sufficient raw material reserves not only for the existing capacities of these plants, but also their in campus expansion and capacity optimization to the maximum extent feasible and approved by the Central Government.

(ii) Other major integrated steel plants of Indian public limited companies also represent large national investments of money,
not just by promoters but also by Indian public at large, whether
directly or through financial institutions. Hence, these investments also
need to be assured reasonable long term raw material security. To the
extent that such plants are already operating or are commissioned by
March 2006, their long term requirements of iron ore must be provided
for on priority.

(iii) In furtherance of the objective of expanding Indian steel production,
iron ore has to be earmarked for new greenfield integrated plants
and also for brownfield expansion of existing plants by the
private/public sector. However, there are large number of proposals
from private sector for setting up new plants and expanding existing
capacities. Not all of them can be depended upon to materialize in a
time bound and efficient manner. It is, therefore, essential to build
stringent safeguards into the terms and conditionalities under which
such private promoters are afforded the privilege of preferential grant
of lease. It is also to be ensured through water tight and legally
tenable protocols, that no applicant is able to lock up precious iron
reserves by adopting delaying tactics, political maneuvering or
legal tangles. Stringent additional penalties should also be
stipulated, apart from automatic lapsing of such leases without
recourse.

(iv) In view of the paramount need to take a quantum leap in steel
capacity and per capita steel consumption and keeping in mind
domestic financial and technology ground realities, there should be no
barrier for one or two large foreign entities with proven track
record and access to global finance and cutting edge technology
to enter the Indian steel scenario; through the platform of an Indian
public limited company so that the Indian public at large can also
share in their prosperity. Such

entry would bring in its wake multiplier benefits of latest construction
and operating technologies, in raw material processing and steel
making on the one hand and on the other, lead to deeper integration
of Indian steel with the world market place.

(v) Such entry should however, be limited to only a few efficient large
scale projects of, say, minimum 10 mtpa which can be
considered of national importance, in order to make a quantum
jump in steel production in quantity and quality.
(vi) Special provision needs to be made for affirmative action to promote at least one major integrated steel plant with all its ancillary and multiplier benefits for location in or near Schedule (tribal) areas in keeping with the purposes of article 244(1) of the Fifth Schedule of the Constitution.

(vii) A large number of steel plants based on small blast furnace and/or direct reduction are coming up in dispersed or clustered locations spread across the country. Such smaller distributed and variegated plants do serve a niche purpose in a large continental economy like India by producing customized grades and special qualities, serving smaller markets, spreading employment and technology with multiplier effects in rural and more remote areas with lower environmental stress etc. Hence, the iron ore needs of such plants also deserve to be fully met. Since it is neither feasible nor technologically desirable to grant small leases to each and every such plant, they would continue to be catered to by the large number of small mines already operating in various iron ore mining sectors. However, to the extent that such smaller units can come together as viable groups or partnerships, with complimentary and optimum utilization of different grades and types of iron ore from large scientifically operated mines and agglomeration plants they deserve to be encouraged to do so by preferential grant of leases.

6.14 (i) After providing the 1st Preference to producers of Steel, by way of captive/ semi-captive mines, it is essential to implement policy measures for encouraging a globally competitive mining industry per se, working to world benchmarks of scientific mining, optimum utilization of all mined material, beneficiation, systematic and time bound prospecting and environmental and bio-diversity preservation. Such professional mining enterprises, whether in the public or private sector, must in the first instance allocate a certain minimum proportion of production (say 70%) to cater to the needs of domestic users i.e. the large number of dispersed mini blast furnaces, direct reduction plants, or combination plants. As an incentive and also in order to maintain strategic interlocking with the world iron ore market on a sustained basis, such professional mining companies could be permitted to export the remaining 30% percent of production in all permissible grades as per Government policy from time to time.
Note:

A view contrary to the Chairman’s view above was voiced by some members of the Group. They felt that at this stage there is no case to bring in new mining companies into the field. In their view, the need is to curb iron ore production and conserve reserves for future use rather than expand production. In their view, there should also be no permission to export any percentage of production.

Since no common ground could be found in respect of this proposal, this proposed Preference does not find place in the final recommendations.

Any explicit stipulation with regard to exports to be permitted or otherwise has also been deleted from Preference B Priorities. Exports can be considered on merits in line with general policy as may be decided by the Government from time to time.

(ii) While many countries in the world are using low grade iron ore through complex and sophisticated beneficiation technology, in India iron ore beneficiation has remained largely a peripheral activity – except in Goa where several mining enterprises are undertaking significant and systematic beneficiation by 2-4% of Fe. Elsewhere, the existing beneficiation plants for Haematite ore upgrade the iron content by only around 1.5% - 2% through simple washing techniques.

(iii) In order to promote a paradigm shift into higher levels of upgradation of lean Haematite ores and for reclamation of the large dumps of mixed and unclassified lower grade iron ore/waste material at Gua and other old mines; by more sophisticated and complex ore-specific beneficiation techniques for strategic long term conservation and prolongation of the life of Indian iron ore reserves, special preference is proposed to be given to attract any world class professional mining company with proven track record to develop major deposits of low grade Haematite ores, say below Fe 58% and reclaim dumps, for supply to domestic/export market after high end beneficiation with latest world class technology. This will motivate and help indigenous mining companies also to improve and expand use of sophisticated beneficiation technologies.
IRON ORE – PREFERENTIAL SCHEDULE

In the matter of grant of fresh PL/ML, the following SCHEME OF PREFERENCES is recommended, in order of priority:

PREFERENCE A:-

PRIORITY I

Existing integrated Central or State public sector steel plants and for their proposed in single campus expansion plans upto 2019-20, as approved in principle, by Ministry of Steel, Govt. of India, to the extent of their phased iron ore requirements for 30 years.

PRIORITY II

Other existing fully integrated steel plants of an Indian widely held public limited company, based on iron ore, subject to already operating crude steel capacity of minimum 2 mtpa commissioned by March, 2006 and for any firm in campus, expansion plan upto 2019-20 to the extent of phased iron ore requirements for 30 years in keeping with actual progress on each phase of expansion and linked to financial closure, placement of minimum 50% orders for plant and equipment etc. as detailed in paras below. MOU should provide for automatic lapsing of lease without recourse and levy of penalties/orfeiture of financial guarantees etc. in the event of default.
(i) In respect of iron ore reserves located in Scheduled areas, priority consideration for the phased iron ore requirements for 25 years for ONLY ONE Greenfield integrated steel plant of minimum crude steel capacity of 2 mtpa promoted by an Indian widely held Public Limited company in or near iron ore reserves falling within Schedule Areas in terms of Fifth Schedule (Article 244(1) of the Constitution of India, subject to prior approval of the Governor/President and subject also to the conditions in proviso below. No foreign partnership to be permitted.

(ii) Any brownfield expansion or a Greenfield integrated steel plant of minimum 4 mtpa crude steel capacity owned by a widely held Indian public limited company to be commissioned by 2011-2012 for its phased iron ore requirements for 25 years. In respect of such brownfield expansion or greenfield plants, an MOU with stringent enforceable penalties/guarantees/indemnities for default to be executed with the applicant allowing time of 18 months for proving substantial progress, including inter-alia, financial closure and placement of 50% firm equipment orders etc., in accordance with a set of predetermined criteria to be evolved by Ministry of Steel/Ministry of Mines, Govt. of India in consultation with concerned State Governments. MOU should provide for automatic lapsing of lease without legal recourse and levy of penalties/forfeiture of financial guarantees in the event of default.
**PRIORITY IV**

The phased iron ore requirements for 25 years of a Greenfield integrated steel plant with a minimum capacity of 10 mtpa of finished steel to be commissioned within 7 years, based on 100% utilization of all ROM grades above 55% Fe promoted by an international steel company of proven track record and bringing in FDI to the extent of minimum 85% of project cost (excluding land) implemented through a widely held Indian Public Limited Company, at a single location in any State with large iron ore reserves, subject to prior approval of the President for the grant of mining lease and in keeping with actual progress on each phase of expansion and linked to financial closure, placement of minimum 50% orders for plant and equipment etc. as detailed in paras below (See Note 6 below).

**PRIORITY V**

Any legal group or partnership of not less than 3 iron and/or steel producers with an aggregate group iron making capacity of minimum 2 mtpa based on usage of 100% of all ROM grades above 55% Fe with requisite beneficiation and/or agglomeration facility to the extent of the phased requirements of reserves for 25 years and subject to stringent penalties /financial guarantees/indemnities and automatic lapsing of lease without legal recourse, in the event of significant and continuous default against conditions extending beyond six months. Exit and entry of group members to be freely permitted upto 50% within any calendar year but subject to seamless transfer and continuity of undertakings/guarantees jointly and severally.
PROVISO:

(i) In all cases i.e. Priority I to III & Priority V above, the plants must compulsorily use minimum 60% of iron ore fines as agglomerate or otherwise. All grades from the captive mines above 55% Fe to be concurrently mined and 100% of ROM to be utilized through beneficiation/agglomeration either at mine site or at steel plant with an allowance of 2 years for retrofitting in the case of existing plants.

(ii) In all cases above, lessees to undertake systematic geological investigations to obtain exhaustive knowledge on the leased area based on accelerated investigations programme to be finalized in consultation with State Government & IBM.

(iii) In all cases of preferences above for grant of lease, only in-principle approvals to be given and actual grant/execution of leased blocks to be appropriately phased to match with the actual phased ramp-up of installed steel capacity. Keeping in view contiguity and other geological and mining considerations.
PREFERENCE B:-

PRIORITY I

A professionally managed existing mining company in the Central or State Public Sector with minimum 5 years iron ore production exceeding 1mtpa for its continuing requirements as well as requirements for any definite time bound expansion upto 2010 approved in principle, by the Central or concerned State Government respectively for reserve requirement of 30 years, subject to compulsory beneficiation of all low grade ore and tailings above 55% Fe. 100% of all in-situ ore between 55% Fe occurring in lease area to be concurrently mined and upgraded for sale as concentrates or agglomerate.

PRIORITY II

A professionally managed company with proven track record in reclamation and beneficiation, applying for production, beneficiation, domestic sale of metallics based on low grade Hematite iron ore deposits certified by IBM to contain not more than 10% in situ ore above Fe 55% - to the extent of reserve requirements for 30 years to be operated with a capacity of 3 to 5 mtpa.

PRIORITY III

A professionally managed Indian widely held public limited company with proven track record of efficient, scientific and optimal mining operations subject to legally binding long term contract to supply iron ore fines, agglomerates and lumpy ore to domestic DR plants, mini blast furnaces, combination plants or other smaller iron making plants for working a minimum 3 mtpa size mine – sufficient reserve allocation for 25 years production. 100% of ROM to be utilized and 100% of all in-situ ore above 55% Fe occurring in lease areas to be concurrently mined and beneficiated to
minimum 60% Fe, for sale as concentrates or agglomerates. Automatic lapsing of lease without recourse and other stringent provisions for guarantees/indemnities/penalties, in the event of default, as in other cases above.
Notes to Scheme of Preferences

NOTE 1

The term lease or mining lease wherever used above includes grant of reconnaissance permit, prospecting licences, mining lease, working permit or the like.

NOTE 2

In view of the rationale explained for the Scheme of Preferences to govern grant of leases under Section 11 (3) & Section 11 (5) of the Act, no other preferences, save and except the preferences enunciated above, explicit or implicit in acts of commission or omission, should be allowed to distort the principles of first-come-first served enshrined in the Act.

NOTE 3

It is clarified, in particular, that such preferences based on financial and technical resources, value addition and investment in downstream industries should be entirely without regard to location of the Indian industry anywhere within the Indian Union and unrelated to boundaries of States as may exist or come into being from time to time.

NOTE 4

In all the above cases of grant of iron ore lease on preferential basis, lower grades of ore occurring in the lease area to be concurrently mined (subject only to any special geological compulsion) and 100% of ROM above Fe 55% to be beneficiated and used as agglomerate or otherwise.

NOTE 5

Except in the case of priority A-IV, which is covered by Note 6 below, no exports or domestic sale of ore to be allowed. However, domestic sale of agglomerates produced from beneficiated ores to be freely permitted. Subject to above restrictions, minority participation by a technology partner including international company in mining, beneficiation and agglomeration is to be permitted.

NOTE 6

With regard to Case A-IV dealing with investment of FDI in the Steel Industry, no free export of iron ore or agglomerates is allowed. Domestic sale of iron ore or agglomerates is also not allowed.

The Chairman and representative of Government of Orissa felt that if a SWAP is permitted and enforced with strict conditions of Fe grade to Fe grade and lump to lump balancing, for technology reasons of adjusting content of Silica, Alumina etc., there should be no objection to such a SWAP provided further that imports precede exports. The import of ore is on OGL and requires no special permit.

However, representatives of SAIL, TISCO, ISA & SIMA were not in favour of allowing any export of iron ore in
the form of SWAP to incentivise FDI as it may open an undesirable window. There would be no objection to import of iron ore by the steel company for the purpose of improving blend and this will also help to conserve Indian ore.

NOTE 7

Any MOUs, LOIs, agreements or the like already entered into by State Governments for preferential grant of lease for iron ore, manganese ore and chrome ore to be appropriately reviewed modified or revoked as necessary. Any future such instruments to be executed by State Government must be in consonance with the preferential schedule above in order to obtain Central Government’s approval.

NOTE 8

For compliance with mandatory beneficiation – utilization of fines/agglomerate wherever mentioned, reasonable gestation period of, say, 2 years for retrofitting, modification/construction and commissioning of relevant equipment should be incorporated.

NOTE 9

Grant of lease for iron ore, manganese ore and chrome ore on preferential basis is predicated upon compliance with the specific conditions above. Non-fulfillment or default against any of the conditions should be viewed as a breach of contract leading to automatic lapping of the lease without legal recourse. Relevant “without recourse” model protocols for the purpose should be drafted in consultation with Attorney General/Ministry of Law & Justice. Automatic lapping of lease is a minimum condition and is in addition to any other penalties or fines leviable under any statute.

NOTE 10

Central Government has the powers in terms of Section 11(5) and Section 11 (3) (e) read together with Section 13 (f), (g) and Section 31, of the MMDR Act to accord preferences and stipulate reasonable conditions attached to the preferences. However, as a matter of abundant precaution subject to the advice of the Attorney General, it would be desirable to bring the entire set of preferential guidelines, as may be modified/accepted by Government, suo moto, before the Supreme Court for taking “cognizance” in order to subsume existing and pre-empt all future contentious litigations in individual High Courts.

NOTE 11

The various conditionalities attached to the suggested PRIORITIES are the very essence of the whole “SCHEME OF PREFERENCES.” A very careful detailing will need to be done to give body to these conditionalities in a pragmatic, technically feasible and legally binding manner through pre-determined agreements/protocols. Ministry of Steel may like to consider initiating such exercises.
A. PREFERENCE

In the matter of Renewals and/or Grant of PL/ML for Chrome Ore, the following scheme of PREFERENCES is recommended:

**PRIORITY I**

Existing operating charge chrome/ferrochrome plants - to the extent of chrome ore requirements for their existing installed capacity for 30 years from presently known reserves.

**PRIORITY II**

Brownfield expansion of existing plants and Greenfield proposals for new plants to produce charge chrome/ferrochrome for commissioning within 24 months - for their phased chrome ore requirements for 20 years subject to availability of residual reserves after catering to I-A above, based on Furnace MVA/m.t.p.a. capacity and an MOU to be executed with State Government. MOU to provide for stringent financial guarantees/penalties linked to time schedule for proving substantial progress including inter alia, financial closure and placement of firm orders within 12 months for 50% of Plant and Equipment etc., in accordance with a set of standard criteria to be evolved by Ministry of Steel, Govt. of India, in consultation with concerned State Governments. MOU to provide for automatic lapsing of lease, without recourse, and levy of penalties/forfeiture of financial guarantees in the event of default.
PROVISO:

i) No export of natural ore will be permitted.

ii) Compulsory accelerated, time-bound geo-logical investigation programme to prove entire extent of ore body, based on investigation plan to be approved by a Joint Committee of State Department of Mining & Geology, IBM & GSI, to be implemented by lessee.

B. OTHER RECOMMENDATIONS:

I

In view of the urgent need to augment known national reserves of chrome ore, State Government of Orissa be requested to de reserve and throw open to competent RP/PL applicants in accordance with above Preferences and the MMDR Act; and after retaining such area for which OMC have a time bound prospecting/mining plan for execution within next 5 years as approved by the State Government; all other areas presently kept reserved for Orissa Mining Corporation, both in Sukinda valley and elsewhere in the state.

II

Technical review to be undertaken for marginal adjustment of lease boundaries vis-à-vis Chrome ore bodies in Sukinda valley of Orissa in consonance with
Preference I-A above, keeping in view geological and mining considerations for ensuring scientific and optimum extraction of ore values, by a technical committee to be constituted by Ministry of Steel with representatives of Ministry of Mines/GSI/IBM and the State Department of Mining and Geology.

III

Export of Chrome ore, other than concentrates produced by beneficiation of low grade ore (below 38%, Cr₂O₃), to be stopped and existing contracts terminated, under force majeur or other appropriate clauses, by 31.3.2006.

IV

Export of concentrates produced by beneficiation of low grade ore feed below 38% Cr₂O₃ to be permitted through MMTC; only from and to the extent of, existing or approved capacity of beneficiation plants which operate under the discipline of a reporting and inspection regime as may be stipulated by IBM/MMTC whether located within or outside a mining lease area.

V
In view of the large spread between mining costs and export prices, Government should consider levy of graded export duties on all exports of chrome including concentrates, if at all permitted.

VI

Policy on exports and on cut-off grade for feed to beneficiation plants to be revised in the light of domestic demand and supply position - once in a block of 5 years, co-terminus with EXIM policy - based on a review undertaken one year in advance.
Papers as under:

- Iron Ore: PREFERENCE A- Priority I to V with proviso (i) to (iii) & PREFERENCE B- Priority I to III & Notes 1 to 11
- Chrome Ore:A. PREFERENCE, Priority I to II with proviso (i), (ii)& B. Recommendations, I to VI
- Rationale for Preferences {Paras 1 to 14(iii)}
- Other Observations & Recommendations (Paras I – IX)

APPROVED

1. Director General, Indian Bureau of Mines Sd/
2. Managing Director, TISCO Sd/
3. Chairman, SAIL Sd/
4. Executive Director, SIMA Sd/
5. Chairman-cum-Managing Director, NMDC Sd/
6. Director General, National Envl. Engg. Research Institute Sd/
7. Secretary General, Federation of Indian Mineral Industries Dissent Note
8. Principal Secretary (Mines), Govt. of Karnataka Sd/
9. Principal Secretary (Mines), Govt. of Orissa Sd/
10. Joint Secretary, Ministry of Mines Sd/
11. Shri Moosa Raza President
Indian Steel Alliance
(with remark against Priority A-V)

12. Shri Ajoy Kumar,
Joint Secretary,
Ministry of Steel – Convener.

13. Shri R.K. Dang,
Chairman
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PART-II

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Chapter-1  Position Papers/Memorandum briefs form Members & other important stakeholders (i) - (xxii)

Chapter-2  Minutes of 1st and 2nd Meetings (xxiii)-(xxxvi)

Chapter-3  Views of stakeholders on various issues Relating to mining of iron ore, chrome ore & manganese ore as indicated in circulated questionnaire. (xxxvi)-(Lxv)

Chapter-4  Shri R. K. Sharma, Secretary General, FIMI's Dissent note on report of Expert Group. (Lxvi)-(Lxxxvi)

Chapter-5  Chairman's reply to Shri R. K. Sharma, Secretary General, FIMI's dissent note on Report of Expert Group. (Lxxxvii)-(xc)

Coloured Graphs on Steel and Iron Ore
POSITION PAPER FROM MEMBERS OF EXPERT COMMITTEE ON PERSPECTIVES AND PROBLEMS AREAS WITH REGARD TO MINING & AVAILABILITY OF IRON ORE, MANGANESE ORE & CHROME ORE.

1. NEERI:

The position papers furnished by NEERI covers the areas relating to minimum size of mining lease area, dumping sites, dust/noise pollution and augmentation of water resources and local green cover that have been summarized as follows:

- Minimum size of mining lease area should be raised from the present limit of 5 ha to 10 ha as the small mine lease owner are not financially strong to undertake scientific mining, afforestation and proper disposal of overburdens/rejects.
- Imposition of ban on the dumping of overburdens on the hills slopes, selection of common dumping site near consortium of mines and adoption of scientific methods (Ex.: using Rhizobium culture) for re-vegetation of overburdens dumps and collection, treatment/disposal of polluted leachate water.
- Adoption of conveyor belt system or rail transportation for carrying ores and other methods like minimum transport on haul road, stabilization of surface of hauls loads and use of quality vehicles with proper maintenance etc.
- Implementation of activities likes water harvesting and infiltration technology though a Green corpus Fund that may be raised jointly by state government and mine owners.
- Sanction of mining lease in accordance with 5 yearly development plan and further progressive revalidation for 30 years (maximum) depending upon the factors like environmental sustainability, ore quality/quantity etc.
- Low-grade ore to be securely dumped and stabilized for future use. NEERI has recommended slope of 10-30% for overburden dumps, which would support fair vegetal cover.
- Wastewater generated from mining of ore and other linked activity should be treated, re-cycled and re-used.
- Each mine area should have enough area to accommodate mining activity, dumping of overburden etc.
- Compulsory filing of annual report by the mine lease owners to IBM/Department of Mining and Geology.

2. Department of Steel & Mines, State Government of Orissa:

The position papers furnished by State Government of Orissa suggests amendments in Section 5, 11(1), 17.1(a), 4A(2), 9(3) of MMDR Act and Mineral Concession Rules 1960, restriction on export of iron ore, iron ore pricing and captive mining. On the minimum size of mining lease state government has suggested removal of any lower ceiling limit. Orissa Government recommended value addition proximity of the iron ore belt as the major criteria for preferential treatment in the matter of granting of mining lease/prospecting licence and thus has supported captive mining concept. The suggested amendments are:

**MMDR ACT:**

- Following amendments in Section 5 powers of the state government for grant of prospecting licences/mining lease on the basis of nationality) and Section 11 (preferential right of certain persons) of the MMDR Act is required:

  (a) Condition should be prescribed to ensure that the mining plan is both comprehensive and environment friendly;
  (b) Any deviation, from such a plan should carry severe penalties.
(c) Modalities should be evolved to closely monitor the mining activities of the lessees and in case of breach of lease conditions the State Government should have the power to stop the mining activities;

(d) The lessee should be bound down to the use of modern and scientific methods;

(e) The capability and capacity of the lessee to use modern and scientific techniques should be carefully assessed;

(f) The lessee should be bound to carefully extract and utilize the entire ore content of the mine;

(g) Severe penalties should be prescribed to ensure that mine closure is invariably carried out in an environment friendly manner;

(h) To ensure scientific and systematic mining, minimum size or iron ore mining lease should be 10 hectares.

(i) Some power to state government in the matter of preferential treatment to PL holder. {Section 11(1)}

- Amendment in Section 17.1(a) (which stipulates reservation of area by Central government in favour of PSUs in consultation with state government) by inserting “concurrence” in place of “in consultation”.
- Section 4A(2) stipulates conditions/grounds on which State government may consider termination of prospecting licence/mining lease. State government of Orissa has suggested to include one more ground i.e. furnishing incorrect facts and misinterpretation.
- Section 9(3) empowers the Central Government to reduce or enhance the rate of royalty. State Government of Orissa has suggested delegation of this power to State governments. The period of revision should be 2 years in place of 3 years.

**MCR Rules:**

- In Rule 35 of MCR a provision may be inserted allowing optimum value addition of the mineral inside the state.
- Necessary amendment in MC Rules to accommodate special revision in the lease condition for 100% prospecting in the first three years.

**Export of iron ore:**

Export of iron ore be discouraged except low-grade fines and if export price is substantially higher.

**Iron ore Pricing:**

- Royalty on iron ore may be fixed on ad valorem basis.
- No price control.
- Import of mineral to control iron ore pricing.
FIMI:

The major recommendation/suggestion received from FIMI are:

- The spurt in the mining activity gears up the exploration activity and discovery of more resources.
- The policy of promoting captive leases to steel plants by the state governments should be done away with. Steel plants should source their raw material from the non-captive source.
- Persons having Reconnaissance Permit, will have priority for Prospective Licence and those having PL will have priority for Mining Lease under Section 11(1). The grey area starts emerging with Section 11(2) and its two provisos. However, these two provisos have laid a roadmap for identifying the basis on which priority can be given in Section 11(3). It is Section 11(5), which gives lot of leverage to State Governments for exercising their discretions which in many cases, may be subject to questions.
- Captive leases are peculiar to India. In the world steel companies have ushered in, due to domestic demand. I captive leases are allotted the steel making company should not be allowed to export iron-ore ore sell iron-ore domestically, as this is against the concept of captive mining.
- Mining is a separate economic activity. Pre-conditions of banning inter-state iron ore movement or value addition only within the state will be detrimental to the growth of mining sector.
- Clamour of Indian Steel Producers for disallowing export of iron ore is not well founded.
- Necessary amendments in environmental law to expedite the forest/environment clearance.
RESOURCES- The total in situ reserves of iron ore as on 1.4.2000 in the country are of the order of 17,712 million tonnes, comprising 12,317 million tonnes of haematite (70%) and 5,395 million tonnes of magnetite (30%).

PRODUCTION- The production of iron ore in India is around 140 million tonnes in the year 2004-05. Out of the total production, lumps constituted 41%, fines 55% and concentrates 4% in 2004-05.

DEMAND OF IRON ORE

i) Domestic Demand of Iron Ore-The reported consumption of iron ore in various industries in organized sector during 2003-04 was about 41 million tonnes. The projected domestic demand of iron ore will be at 113 million tonnes and 180 million tonnes by 2011-12 and 2020, respectively.

ii) Export Demand of Iron Ore-Exports of iron ore in 2003-04 are provisionally estimated at 51 million tonnes and valued at Rs. 5174 crore. By 2020 the export demand for iron ore is expected to be around 114 million tonnes.

iii) Total Future Demand of Iron Ore-Thus, the total future demand (both domestic & export) by 2020, is expected to be around 294 million tonnes including 180 million tonnes for domestic consumption and 114 million tonnes for exports. Thus, the total demand is rounded off to 300 million tonnes by 2020.

PRODUCTION PLANNING FOR FUTURE

The current mining capacity of iron ore in the country is around 120 million tonnes. To meet the enhanced requirement by the end of 10th plan, this capacity has to be enhanced. This can be achieved through consolidation of leases, mechanized mining operations in Bellary-Hospet area and improvement in the operating capacity of existing mines in Bailadila and Dalli-Rajhara sector. Similarly, the envisaged demand of 173 million tonnes by the end of 11th plan and 300 million tonnes by 2020 can be also be met with opening up new mines in the eastern sector covering Chiria, Malangtoli, Gandhamardhan and Dubna deposits and also at Bailadila. The phase wise plan for mining iron ore by 2020, consistent with quality requirement needs to be developed.

PROBLEMS IN MINING

- Beneficiation- The beneficiation scheme is employed to improve the iron content and reduce the alumina and silica contents. The washing plants although relatively efficient amount to considerable loss of iron values in the form of slimes (10 to 25% of the ROM processed) and discharged in the tailing ponds covering a vast tract of land. These slimes assay around 50-55% Fe, which in many countries is the ROM grade of iron ore deposit.

- Research and Development Needs- Comprehensive R&D studies in premier research institutions in the country are needed to maximize iron recovery and contain tailing disposal problems.

- Environmental Concerns- Environmental concerns are of prime consideration and the National Mineral Policy spells out this aspect. Adequate provisions exist in MMDR Act, 1957; MCR, 1960; and MC & DR, 1983.

- Infrastructure- The future capacity expansion of iron ore mining is possible only with expansion of railways particularly in the eastern zone and the port facilities in the eastern and western coasts.

- Foreign Direct Investment (FDI)- To mobilize investment especially Foreign Direct Investment (FDI) in mining sector, the Government has relaxed foreign equity on exploration, mining and beneficiation of minerals, except precious stones. Therefore, the initiative to bring FDI in iron ore mining is necessary.

SUGGESTIONS

- Certain fundamental changes are happening in the World Iron Ore market. To be competitive, some precautions should be taken to avoid unnecessary losses of Fe value in the mined ore. New arrangements like buy back of finished products may be worked out with the importing countries.
➢ To meet the growing need of steel requirements, it is necessary to modernize mines. Budgetary measures may be taken to reduce duties on mining equipments and encourage mechanized mining.

➢ Emergence of new production capacity of Orissa can utilize major chunk of the stocks of fines into pellets for their utilization in the new plants.

➢ Currently India is exporting more of raw materials and less of value added products. This trend, therefore, needs to be reversed.

➢ Major Steel manufacturers like SAIL, Jindal Steel & Power, TISCO, Monnet Ispat, etc., are in fray for acquiring overseas mines, which in fact is a global phenomenon. To ensure cost effective supply of raw materials this avenue should be followed by the Steel industry on a major scale and, alternatively, explore the possibility of supply of iron ore on a long term contract.
5. **STEEL AUTHORITY OF INDIA LIMITED**

**Simplication of grant/renewal of mining leases**

Single Window clearance to be adopted, as per draft National Steel policy.

- A Nodal agency at State Level to identify the blocks proposed for grant of mining lease only after pre determining the criteria for grant of mining lease demarcation of areas for opening up of mining and closure of mining due to environmental concern may be pre determined, only after this application for grant of M.L. be invited.

- Compensation should be based upon the environmental sensitivity of a job.

- Tribunal/Expert Committee in Government of India under Ministry of Mines may be set up for deciding the unresolved issue of a nodal agency.

**Preferential rights to certain parties.**

- Preference may be given to existing steel producers.

- Linkage of iron ore for 50 years to be reserved for captive users. It may ensured that mining lease contain minimum reserves of 100 million tonnes, which would last for 50 years. This will encourage scientific mines.

- Preference be given for sintering and pelletization facilities.

**OTHER ISSUES**

- Mining lease may be granted for 30 years and there be automatic renewal after 30 years for captive users.

- First renewal may be automatic. Incase of no breaking for fresh forest land/no capacity expansion.

- State Government should not impose condition for value addition in the State. Inter State movement of iron ore within the country should be free.

- Provision be made for cancellation of mining lease incase of violation of statutory regulation and pollution control.

- State Government should insist on blending of different qualities of ores for ensuring mineral conservation.

- Mining company, which can conduct large-scale exploration, should be given priority over others.

- While granting mining lease preference be given to special steel and ferro chrome producers in case of grant of manganese ore, chrome ores leases.
NOTE FOR THE EXPERT GROUP TO FORMULATE NATIONAL GUIDELINES ON IRON ORE MINING

1. Mineral resources are non-renewable. They are the ‘natural assets’ of any country. Hence, a carefully thought out Minerals Policy is strategic to any country.

2. Mineral Policy should deal with allotment of leases, their sustainable extraction, economics of converting them into products useful to development of countries and their impact on the national gross domestic product.

3. In view of several factors influencing the Minerals Policy of a country, each mineral needs to be studied in depth with reference to its availability, cost of conversion to finished products and their impact on nation’s growth. Each mineral could have a different policy depending on the extent to which it impacts these factors.

4. This note deals with only allotment of leases and with specific reference to iron ore, chrome ore and manganese ore—all of which are steel making raw materials.

5. **Iron Ore:**

5.1 India’s reserves of iron ore, both haematite and magnetite, is estimated at about 18 billion tonnes, of which the extractable reserves are about 12 billion tonnes (These are approximate figures, based on available/published data.).

5.2 India is the only country in the world which has iron ore reserves as well as population size that could consume steel in large quantities. (Other iron ore rich nations like Brazil, Australia, Russia, Ukraine, Iran have much smaller population and hence lower potential steel consumption and could use their iron ore reserves, depending on the extent of reserves vis-à-vis potential consumption of steel, for export and use such export earnings as a source to boost domestic economy). Hence, there is a need for India to preserve its iron ore reserves for future domestic steel consumption.
5.3 Though India consumes only about 34 million tonnes of Steel per annum currently (at a per capita consumption of about 32 kg per person), its demand is bound to go up, just like the way Chinese steel consumption has grown up. India needs to plan for a per capita consumption of about 300-350 kg per person, as the economy grows. While it is difficult to predict how long it will take India to reach the level of per capita consumption, we need to plan everything else (infrastructure, mineral resources, land, water, etc.) keeping in mind that one day in the future India will indeed reach a per capita consumption level of about 300 kg per person. Without such a plan, the growth of steel industry would hit roadblocks for natural development.

5.4 At a per capita consumption total of 300 kg per person, India’s steel consumption will be about 500 tonnes per annum.

5.5 India will need to depend on integrated route (iron ore route as opposed to scrap route) of steel making for quite a few decades, since India cannot generate sufficient capital scrap for large scale scrap route steel making. It would be reasonable to assume that not more than 20-30% of the future steel requirement of India will come through scrap route for quite a few decades till such time Indian economy grows towards large scale steel consuming economy (as opposed to infrastructure economy).

5.6 Assuming that about 30% of steel is made through scrap and scrap plus sponge iron route, and the balance through integrated route, India will need about 600-700 million tonnes of iron ore for producing 500 million tonnes of steel. This would mean that Indian known and proven iron ore reserves will last only for about 25 years at a per capita consumption level of 300 kg per person. (which is the average of developed countries.)

5.7 Even assuming that it will take about 50 years for India to reach this level of per capita steel consumption, its iron ore reserves will last only for about 75 years for now.

5.8 Conversion cost of iron ore into steel in India is globally competitive due to favourable factors of production.

5.9 Therefore it is imperative that our iron ore reserve be preserved and not be exported for such temporary and short term gains, both from the point of view
of the huge potential for domestic consumption as well as the competitive cost at which iron ore can be converted to steel in India.

5.10 In terms of allotment of iron ore mines:

- Iron ore mining needs to be done on a large scale, at least 5 million tonnes per annum from each mine and preferably 10-20 million tonnes per annum, far achieving economies of scale and to place Indian Steel Industry in a globally competitive position.

- All Steel plants having a capacity of at least 3 million tonnes per annum to be allotted captive iron ore mines.

- Smaller plants of less than 3 million tonnes per annum capacity need an assurance for iron ore supply for perpetuity and to the extend of their need, at any given time. Renewals of leases should be automatic, subject to conforming to stipulated mining practices. As and when these steel companies expand their capacity, they need to be given leases of appropriate quantity of reserves for long term supplies.

- Steel plants of more than 3 million tonnes per annum capacity need an assurance from iron ore supply for perpetuity and to this extend of their need, at any given time. Renewals of leases should be automatic, subject to conforming to stipulated mining practices. As and when these steel companies expand their capacity, they need to be given leases of appropriate quantity of reserves for long term supplies.

- Mining companies, given leases for supplying iron ore to steel companies of less than 3 million tonnes per annum capacity needs to have back to back long contracts with these steel companies and which, put together, should form the basis of allotment of reserves for these mining companies.

- As and when these small steel companies expand beyond 3 million tonnes per annum capacity, they should be given captive leases.
• Reserves not allotted to large steel companies and mining companies (to serve the small steel companies) should be kept as “Bank” with the Central Government to be allotted on need basis to either large steel companies or to mining companies.

• It is extremely essential to strongly discourage, if possible by legislation, fragmentation of mines; selective mining and such practices that leads to unsustainability of mines.

• Beneficiation should be encouraged and made mandatory to enhance life of resources.
BACKGROUND

1. The per capita steel consumption (35 Kgs) in India is one of the lowest in the world. India will need over 400 MT of Iron Ore per year to produce & consume 250-300 MT of steel. India has only 17 billion tonnes of Iron Ore reserves out of 330 billion tonnes in the world. Out of this, the proven reserves are only 50% i.e. 8.6 billion tonnes. At 400 million tonnes of Iron Ore consumption per year, the proven reserves of India will get exhausted in just 17 years.

2. In the state of Karnataka, Hospet-Bellary sector has only 0.7 billion tonnes of proven deposits i.e. 10% of the India’s deposits. During last year, India exported 70 million tonnes of Iron Ore, out which Hospet-Bellary sector exported 23 million tonnes i.e. 33% of India’s total Iron Ore export. As can be seen having only 10% of India’s total deposits, Hospet-Bellary sector constituted 33% of export of Iron Ore, thus depleting Iron Ore reserves in sector very fast.

3. 1.7 tonnes of Iron Ore is needed to produce 1 tonne of steel. On mining of 1.7 tonnes of Iron Ore, the exchequer gets only around Rs. 45 towards royalty and forest cess. By converting 1.7 tonnes of Iron Ore into steel say H.R.Coil, the exchequer gets Rs. 4,320/tonnes as excise (16%) and Rs. 1,080 as sales tax (4% of the price), totalling to Rs. 5,400/tonne of steel. Thus, even from national perspective it is desirable to convert Iron Ore to steel.
4. Jindal Vijaynagar steel Ltd. is the only land locked steel plant not having any captive Iron Ore mines in spite of it being located in the heart of Hospet-Bellary sector (the mines located at 17-30 km of the steel plant).

**SUGGESTIONS:**

1. The National Mineral Policy must ensure allotment of captive Iron ore mines to the steel plants on top most priority.

2. Export of Iron Ore should be banned to conserve this vital non-renewable mineral resource.

3. Existing Iron Ore mining leases should be retrospectively modified with – *No Export Clause* ore modified for trade clause only after the assured supply of Iron Ore to the Steel plants in the state/region.

4. Renewal of existing mining leases/leases/grant of fresh leases should be done only for captive purposes within the state/region in line with the principle followed by Jharkhand, Orissa and Chhattisgarh.

5. Coming to Chrome Ore and Manganese Ore, the situation is even tighter than that of Iron Ore. Therefore, these mines should be reserved for domestic producers of Ferro alloys only.
From the overall perspective of the mining industry, the company, Sesa Goa Ltd., believes that there needs to be an acceptance that the mining sector should be separated from the manufacturing sector. The mining philosophy of the company is based on maximizing recoverable iron ore from the various iron ore leases at the lowest possible cost. The company suggests that achieving these two objectives must be a part of the National Guidelines.

Sesa Goa Ltd. has given comments on three specific areas:

1. CAPTIVE MINING:

The allocation of iron ore resources on the basis of captive use should be discouraged. Captive mines tend to produce the highest iron ore at the lowest cost. Mines stripping are often avoided to minimise costs. The grade of ore mined is often above the average life of mine grade. These actions inevitably led to poor resource utilization. Moreover, the captive mines are too small to benefit from economy of scale. There is also an issue of security of supply. In the case where a steel plant is dependent for all or most of its ore from a captive mine, it is very vulnerable to supply disruption. Thus, In Sesa’s view, India’s iron ore resources should be allocated on a large scale to well established Indian mines. The objective should be for these miners to establish large scale, world class, multi pit mines.

The company further notes that the current MMDR Act, 1957 allows preferential allocation mineral resources to those who have special knowledge, experience, financial
resources and quality technical staff. It urges that these guidelines be retained and in fact reinforced as a basis for iron ore resource allocation.

2. ALLOCATION PROCESS

There is a further major issue that impacts on iron ore availability and that is the time taken for a resource to be allocated. With both increasing domestic and international demand for iron ore, India needs to be developing many new iron ore mines. Current iron ore resource allocation is not happening at the required pace. There are too many parties and steps involved to allow a fast processing of lease applications and mining approvals. There needs to be a drastic streamlining of these processes. Whatever National Guidelines for Resource Allocation are developed, it is critical that there are also processes put in place that allow speedy implementation of the guidelines.

3. INFRASTRUCTURE

The current road and rail systems are overtaxed and struggle to cope with the increasing tonnages being transported. This results in freight increases and supply disruptions that result in a higher delivered cost. Notwithstanding the Government efforts to alleviate the infrastructure bottlenecks, private investment should be encouraged to accelerate infrastructure developments.
9. **SIMA**

Suggestions/comments on the subject matter for inclusion in national guidelines.

- **Priority in allocation of high-grade iron ore blocks/mines** should be given to sponge iron industry to meet the growth plans of national steel policy.

- **Procedural delays in acquiring and operationalising iron ore mines** at the level of state and central government should be brought down.

Suggestions in this regard are

(a) Simplification of the forest clearance system.

Barring China, growth of steel consumption in India is highest in comparison to other countries. India’s steel production grew nearly 9% during the last year. Due to increase in the infrastructural investment and growth in automobiles and other sectors, demand for steel is expected to grow at a higher rate in the next years.

Government of India has envisaged 110 million tonnes of steel demand by 2020. Accordingly, most of the integrated plants are gearing up for capacity expansions. To reach 110 million tonnes of steel India would require 200 million ton of iron ore. **If we continue to export, India’s high-grade Hematite iron ore of above 62% Fe will be sufficient till year 2030 only.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Steel Production</th>
<th>Domestic Requr</th>
<th>High grade Reserves*</th>
<th>If 50% goes for exports then reserves</th>
<th>Last for</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>60MT</td>
<td>110MT</td>
<td>6322MT</td>
<td>3161MT</td>
<td>28 years</td>
</tr>
<tr>
<td>2020</td>
<td>10MT</td>
<td>200MT</td>
<td>--------</td>
<td>--------</td>
<td>15 years</td>
</tr>
</tbody>
</table>

- Hematite reserves of 62% +Fe.
10. **RASHTRIYA ISPAT NIGAM LIMITED (RINL)**

RINL/VSP does not possess a captive iron ore lease to meet its prime raw material i.e. iron ore without any vagaries of the market fluctuations. As you are kindly aware all the public sector integrated steel plants and some of the private sector steel plants in India have captive iron ore leases except VSP. From the inception RINL/VSP is purchasing its requirement of iron ore from NMDC with an annual average price increase of 11% up to the year 2002-03, during the year 2004-05 the price increase is 60 to 70% and for the year 2005-06 though the price is not finalized, indications are there that it may further increase. With such price increase every year RINL/VSP will not be able to compete in the market along with other integrated steel plants having their own captive iron ore mines with their landed cost of average Rs. 400/- to 500/- per tonne compared to present landed cost of Rs. 1100/- in case of RINL/VSP.

In view of above RINL/VSP requested NMDC, Bailadilla to allot one of the deposits as a captive source for which NMDC refused to hand over any of their deposits at Bailadilla. Then RINL/VSP applied for leases in the states of Orissa and Chhattisgarh respectively. The issue was followed up with the respective state governments and it was informed that our applications for iron ore lease will not be considered as the steel plant is located in AP and they can consider only if value addition by way of steel plant is set up in their state. In RINL’s opinion such a discrimination to allotment of iron ore deposits may not be advisable in the interest of overall growth of the country. RINL requests that (1) One of the deposits of NMDC preferably 4 & 5 at Bailadilla, which was originally envisaged under DPR is formally declared captive to RINL/VSP, (2) alternatively RINL’s ML applications for Rowghat deposit (A,B,C,D,E) in Chhattisgarh state be considered for allotment or (3) the application for iron ore in Keonjhar/Sundargarh districts in Orissa be considered in the order of preference due to the proximity to the steel plant at Visakhapatnam.

Further RINL would like to highlight the following points:-

Indian per capita consumption of steel is 30 Kg. As against world’s average consumption of 150 Kg, Indian to reach the world’s average per capita consumption of steel (150 Kg.) has to produce 150 Million Tonnes for which the iron ore requirement will be (150 million tonnes x 1.6 T) 240 million tonnes. The Indian proved iron ore reserves are about 13.4 billion tonnes. In case India wants to achieve the World’s average steel consumption then the iron ore requirement of 240 million tonnes will have a life of only (13400 million tonnes ÷ 240 million tonnes) 56 years only. It proves that the assumption that India is rich in iron ore is not true and appropriate decision for conserving the iron ore have to be taken.

(i) Indiscriminate mining is to be immediately stopped and low grade reserves have to be properly conserved.
(ii) Indiscriminate exports without value addition have to be stopped.
(iii) To allot iron ore deposits to the needy existing steel plants and rationalize installation of new plants on the available reserves judiciously. It is advisable to locate future steel plants close to iron ore and coal deposits to avoid unnecessary freight.
(iv) Low grade reserves can be enriched through pelletization and the pellets can be utilized through Blast Furnace feed for steel making, thus conserving out precious iron ore reserves.
Conclusion:

1) Thuis expert group to look into the present iron ore linkages to the different integrated steel plants and suggest economic linkage of iron ore to sustain production of steel on long term basis.

2) Proved existing iron ore deposits suitable linked with the existing steel plants to reduce the traffic congestion and railway freight and consequently cost of production of steel.

3) To grant approval for setting up new steel plants taking into consideration the balance available iron ore deposits.

4) Suitable iron ore deposits to be identified for exploitation purely for export purposes without affecting the iron ore requirement for domestic consumption for steel and allied industries.
POSITION PAPER ON PERSPECTIVE AND THE PROBLEMS ON MINING AND/OR AVAILABILITY OF IRON ORE

11. **KIOCL:**


2. As such, Sub-Section (1) to (5) deals with various situations arising out of application for a reconnaissance permit or prospecting licence or mining leases, etc.

3. Mineral wealth is a national wealth and therefore it should be exploited properly and the entire resource should scientifically mined and utilization of lumps, fines and blue dust should be done. In respect of Iron ore, there have been instances wherein during the curse of mining a large portion of fines and blue dust are left behind except in the recent past these have been taken to be considered is that while processing the Mine Lease applications “beneficiations expertise and value addition expertise” should form essential criterion for qualifying as successful applicant.

4. It is becoming common practice that many states follow the practice of giving mining leases of small areas to customers for sponge iron manufactures and/or small steel making capacities. This does not work in line with the overall objective of optimizing the extraction of resources since they will utilize one portion of the ore and they indulge in trading the remaining part. Therefore, leaving aside the existing iron ore mines for captive consumption by SAIL, TISCO, etc. the remaining iron ore mines may be allotted to the mining companies who have the capability to exploit in the best optimum manner.

5. The existing provision of reservation to public sector to continue.

6. Renewal for Mining Lease should be automatic, as abrupt stoppage would definitely lead to ecological imbalance of the area and require detailed Mine Closure Plans, which should be country is yet to witness. This can be so in all the on-going mines where men and machinery can be utilised to the potential by exploiting the entire proven reserve by utilizing the latest technology available.

7. Guideline may also incorporate transparent gazette notification and processing of applications there-against.

8. **Other issues:**

8.1 Railway infrastructure is totally inadequate to meet the volume of iron ore traffic. Basically there are two requirements in this connection (a) Rail Connectivity (b) adequate rake availability.

8.2 Presently huge quantities of iron ore are moving by road for e.g. about 6 million tonnes of iron ore move from Bellary-Hospet , Tumkur and Chitradurga sector or Mangalore Prot and about 5 million tonnes of iron ore to Paradeep Port from Eastern Mines. Apart from damaging the roads, this also becomes drain on the overall particularly at a time high crude oil price.

*****
I. Iron Ore demand is linked with the production of steel. As the steel production grows, so is the demand of iron ore. Indian Iron Ore production is about 135 million tonnes. Of this, about 54 million tonnes is consumed by the steel industry and the rest about 75-80 million tonnes is exported mostly to Asian Countries.

II. The massive thrust on the expansion of steel industry and promotion of steel consumption in the country is on Government’s priorities to increase the per capita steel consumption at par with the world average.

III. Iron Ore resource is not distributed evenly in the country, Five States hold 90% of the total iron ore reserves and contribute about 88% of the total iron ore production.

IV. The Iron Ore rich states have taken various steps to exploit the resources, falling within their boundaries by taking into consideration their socio-political and economic factors. Each state is trying to have its specific priorities to decide on leasing out the area to the Entrepreneurs.

V. The issue before us is how best country’s iron ore resources are to be exploited to feed the proposed steel plants including existing ones irrespective of their location in the country. Iron Ore or any mineral should be treated as free flow commodity in the country. State boundary should not come in the way of putting steel plants elsewhere.

VI. No. of leases granted and its distribution between Public vs. Private Sector for Captive vs. Non-captive and State wise with corresponding production are shown in Annexure-1. About 60% of the granted leases have been idling. About 25% of the total number of leases is less than 5 Ha. Small lessees generally lack adequate financial resources and technical expertise for systematic exploration, exploitation and to undertake environmental protection measures for development of the deposit.

VII. Iron rich states in order more advantage from the naturally occurring resources in its jurisdiction make certain pre-condition unit. The States are so possessive of iron ore that steel plants elsewhere would be denied of getting the lease for the required iron ore. This naturally goes against the principles of equitable and fair distribution of resources available in the country. Hence, there is a need to address such situations.

VIII. **MMDR ACT-1957**: Section 11(5) of MMRD Act, 1957 contained that the State Government may grant to any party RP/PL/ML on “specific reason” whose application was received later in preference to an application received earlier. The intention behind adding the above section is the very fact that a particular application, field first is no ground for grant of ML/PL unless the applicant if found other wise eligible and deserving should not be denied his claim being the first applicant.

The above section gives scope to State Government to assess the eligibility of the applicant to undertake scientific exploration and subsequent development in sustainable manner. Various States are in process to evolve criteria to accord preference under the above section **MMRD Act.**
It is thus felt a need to formulate guidelines, which would help in zeroing on the applicant for a according preference for grant of mining lease.

The following are the suggested merits, which may be looked into to access the capability of the party to attract the above section of MMRD Act:-

1. Experience and success story from concept to commissioning of the project- *Technical Competence.*
2. Availability of expertise and desired skill. This can be assessed with the past performance of the Company/applicant/party- *Operational and Management Expertise.*
3. Annual turnover of not less than Rs. 200 crores- *Financial Strength.*
4. Demonstrated strength to conserve the environment and bio-diversity of the region surrounding their existing operation- *Demonstrated Commitment to improve natural environment.*
5. Adherence to conservation of mineral by following the principle of total utilization of material coming out from the mine- *Concept of total resource utilization.*
6. Demonstrated will to develop the peripheral areas and contribute to overall development of the region- *Social and community Development.*
7. Access to a Research and Development Centre to innovate process for value added product from the waste generated in the mine- *Innovation activity to add create value.*
8. Merchant Mining Enterprises, who could assess the market need of different products of the Iron Ore – *Flexibility to cope up with market requirement.*
10. Adequate size of the mine of not less than 2.0 million tonnes capacity- *Large mine concept.*
11. A party which is already having an operating min and if the reserves are likely to get exhausted within then years and appliers for a fresh M.L. as a replacement mine, preference should be given to such party.
12. If an applicant is already committed to supply the ore to domestic steel plants and foreign buyers and requires another lease to fulfill the commitments, he should be given preference over the applicants proposed for setting up a steel plant/value addition.
13. If already a steel plant exists and requires a captive mine for its expansions, the party seeking lease for expansion should be given preference over the fresh applicant for setting up of a new steel plant.
14. Concept of mining as an industry by itself needs to be recognized. A large mine should be preferable to a number of small mines in the same deposit/range to encourage systematic mining, which would also ensure optimal exploitation and conservation of the mineral.

***************
### Annexure-I

1. No. of mining leases 601
   Lease area 95,029 ha
   as on 31.3.2003

2. Mines reporting production

<table>
<thead>
<tr>
<th>No. of Mines</th>
<th>Production in '000 T</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2002-03</td>
</tr>
<tr>
<td><strong>INDIA</strong></td>
<td></td>
</tr>
<tr>
<td>Public Sector</td>
<td>40</td>
</tr>
<tr>
<td>Private Sector</td>
<td>202</td>
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<td>'A' Category</td>
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<tr>
<td>'B' Category</td>
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<tr>
<td><strong>STATES</strong></td>
<td></td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>8</td>
</tr>
<tr>
<td>Goa</td>
<td>56</td>
</tr>
<tr>
<td>Karnataka</td>
<td>67</td>
</tr>
<tr>
<td>Orissa</td>
<td>77</td>
</tr>
<tr>
<td>Others</td>
<td>16</td>
</tr>
</tbody>
</table>
FIRST MEETING OF THE EXPERT GROUP HELD ON 19TH MAY, 2005 IN STEEL ROOM AT 10.00 AM UNDER THE CHAIRMANSHIP OF SHRI R.K.DANG ON FORMULATION OF GUIDELINE ON PREFERENTIAL MINING RIGHTS TO STATE GOVERNMENT UNDER SECTION 11(5) IN RESPECT OF GRANT OF MINING LEASE OF IRON ORE, MANGANESE ORE AND CHROME ORE, TO CERTAIN PERSON.

1. The list of the participant is annexed as Annexure-I.

2. Shri Ajay Kumar, Joint Secretary (Steel) & Convener member welcomed the participant and introduced the Chairman to the members of the expert group. He explained the background for formation of expert group and its terms & references.

3. In his inaugural address, Shri R.K.Dang, Chairman, Expert Group explained/listed out the various issues for discussion by the members in the first meeting such as the model mineral policy for reservation and supply of ore to domestic market, interest of state government in term of royalty for employment generation Versus national interest (equal opportunity, no unreasonable discrimination, free market), captive mines verses supply of iron ore by supplier/mine owner, elimination of delays in grant of mining lease/license, Conservation of mineral Vs optimum utilization of resources, qualitative/quantitative domestic requirement, value addition issue Vs export rational and how to reconcile MMDR Act and statutory provisions relating to ferrous minerals with national interest and legitimate state aspirations and evolve a national consensus.

4. Shri V.S.Jain, Chairman (SAIL) in his presentation stated as under:

   (i) There is a need for new allocation of mining leases to the existing units of steel companies like SAIL as the existing leases are depleting.

   (ii) Out of 42 mining leases granted to SAIL, except 4-5 leases, in case of all other mining lease, company is operating on deemed extension basis. This is due to problem of multiplicity of agencies and delays at lower levels of clearances. The process of granting /renewal of mining lease is tedious and takes several years while in other countries this takes only 2 years.

   (iii) To overcome the problem in the process of granting of mining leases, single window concept for granting of mining lease should be implemented. State governments should initiate steps for identification of area and should work for identification of mining area, getting environment/forest clearance etc. and charge compensation from the user. With this compensation state government may go for development work in the state.

   (iv) In place of fragmented mining of small sizes, there should be a minimum size for the mining lease. This minimum size should be about 2 million tonnes.
(v) Captive mining should be allowed in case of large Steel Plants. In case of others domestic users, there should be a big player specialized in the mining for supply of iron ore.

(vi) The criteria for granting of mining lease should be credibility of the applicant and not the time of receipt of application.

(vii) SAIL has planned to raise the production of steel from the present capacity of 12 million tonnes to 20 million tonnes. The steel consumption is also expected to grow from 33 million tones to 62 to 65 million tones in this period. The reserve available is sufficient to meet the requirement for 50 to 60 years. In view of the fact; value addition over export should be encouraged.

(viii) Heavy investment is involved in setting up a steel plants which have life expectancy of 30 years initially and thereafter 30-40 years. So the criteria of captive mining lease should include sufficient reserves to meet the requirement of the plants in first 30 years. Further the mining lease should have additional reserve for next 30 to 40 years.

(ix) He agreed to the suggestion that State Government should not be deprived off the opportunity for the development state in term of employment generation, poverty elimination etc. If the same logic is applied in case of oil sector which is being applied in case of iron ore, this would have resulted in setting up all the refinery plant in Assam and not in other state like U.P, Rajasthan etc. On logistic consideration entrepreneur would like to set up the plant in the states where raw material (iron ore) is available. Sometime this logistic consideration comes very close by. For example: IISCO is situated in west Bengal but its iron ore linkage is in Jharkand. So State Governments should take in to account the national perspective also. He suggested allowing the market forces to play a role in the matter in place of government directives.

5. Dr. S.R.Wate, Dy. Director, NEERI submitted a position paper on various issues relating to environment/forest protection for consideration of members of the expert group. In his presentation he stated as under:

(i) Representative of Ministry of Environment & Forest be included as a member in the Expert group.

(ii) He supported the suggestion of Chairman/SAIL for implementation of single window mechanism for grant/renewal of mining lease.

(iii) Minimum size of mining lease should be at least 10 hectare.

(iv) Creation of a ‘Green Fund’ through the contribution of mine owner for carrying out activities relating to environment protection/forestation etc., by a separate implementing agency. A separate environment protection management plan may also be evolved.

(v) Policy on re-habilitation, socio economic issue should be made a part of the mining policy in place of various provisions in Environment Protection Act.
He agreed to furnish a paper suggesting concrete proposal for getting up-front clearance in respect of environment and forest.

Ms. Lata Krishna Rao, Secretary, Commerce & Industries, Government of Karnataka informed the members about the umbrella mechanism/single window clearance mechanism being implemented in Karnataka to industrial houses. In her presentation she stated as under:

(i) Delegation of more powers to state government particularly in the area environment/forest clearance and in the area of granting of mining leases outside the forest area. She suggested for necessary amendment in Environment Protection Act for delegation of powers.

(ii) Once mineral deposits are identified and mapped the decision for permitting the mining in that area should be taken at one go unlike the existing mechanism of piecemeal approval i.e. clearance to individual mines. This requires amendment in statutory provision.

(iii) A consolidated fund may be created through voluntary contribution of mine owner for infrastructure development in the affected area.

(iv) If power of Granting of mining leases is delegated to Committee under the State Government that would reduce the time in processing the mining lease application.

(v) Government of India may review the policy for granting of mining lease and export of iron ore etc. on the basis of data made available possibly by Institution like IBM or any other institution giving the reserve available in the country, reserve more suitable for sponge iron plant or the steel plants.

(vi) Central Government may take action for imposition of such condition on the mine owners that would allow the mine owner to export a certain percentage of mine proceeds and supply the other certain percentage of mine proceeds to domestic customer. A judicious mix between export and supply to domestic customers is the need of the hour. State governments are not in position to impose such condition on the mine owners due to possibility of legal battle with the mine owners.

(vii) The issue of inter-se-seniority in terms of recommending within existing steel plants in the states or sponge iron plants or the steel plants in other states should be left to the state government. No statutory amendment is required. A provision in the mining lease for supplying a percentage to local consumption is sufficient.

(viii) The problem with regard to delegated powers of State Government is not due to the reason of non-availability of such criteria in the statute but due to absence of clearly defined rights of PSU/organization in respect of export of ore so produced or its supply for local consumption.

(ix) In the matter of granting of mining lease, State Government gives preferential treatment in favour of local enterprises because it boost the economy of state in term of revenue, in terms of employment and other benefit to the society.
(x) Big mining lease as suggested by other member are good in idealistic term but not practical in real term as some of the land are privately owned. Small leases are required for the small mine owners. NEERI point of view for the amalgamation of small mining leases is not practical.

(xi) She supported the view of other member for creation of a ‘Green Fund’.

7 Shri B. Ramesh Kumar Chairman, NMDC in his presentation stated as under:

(i) Where it is known that mines is situated in forest area, government should first take a decision that whether to develop the mineral resources in that area or not. A decision to develop the mineral resource in forest area itself implies degradation of forest. He suggested mapping of mineral area.

(ii) The issue of environment protection is made applicable in case of mining of iron ore only while there are other factors causing degradation of forest.

(iii) NMDC is exporting iron ore only to meet its commitment under long term contract. So far domestic requirement of sponge iron plants is concerned, earlier; these plants were lifting the iron ore from elsewhere because at that time it was cheap. There is no shortage of iron ore as 50% of the production is exported. The current problem is due to market dynamics and due to spot purchase started by China from the middle of 2003-04.

(iv) Government should re-examine the whole issue of export of iron ore. He suggested that except long term contract, export of iron ore should not be allowed.

(v) Government should not allow fragmentation of mining leases. Large mining lease should be given preference.

(vi) Preference should be given to existing mining organization facing depletion of mineral in the existing mine, if such organization applies for fresh lease.

(vii) Specialized mining houses should be given preference as they are able to undertake scientific mining.

8 Shri Sandeep Jajodia, Chairman, SIMA in his presentation stated as under:

(i) There is a shortage in supply of iron ore which is reflected in term of its rising prices.

(ii) He suggested reserving all the high grade iron ore mines for sponge iron ore units.
(iii) As a short term solution the PSUS/mine owner should be allowed to export the high grade iron ore only after meeting the domestic requirement.

(iv) He supported the view of Secretary, Commerce & Industries, Government of Karnataka for formation of one Committee with all the delegated powers in respect of granting of mining lease, forest clearance, environment clearance etc.

(v) He suggested scraping of such mining leases granted to mine owners which have not been developed by the mine owners since decades and are lying idle.

(vi) On the size of the mining lease he suggested nationalization of mineral.

(vii) He supported the view of Chairman/SAIL for encouraging value addition.

9 Shri R.K. Sharma, Chairman, FIMI, opposed the idea of more delegation of powers to state government. In his presentation he stated as under:

(i) He opposed the stand of State Government in giving preference to local consumer on the ground that for running the industry, besides iron ore, other inputs like coking coal, dolomite, limestone, water are also required and it would be difficult for the entrepreneur to accept such request of one state government as the other state government may also follow it in respect of other inputs. He supported the view of Chairman/SAIL that state government should take in to account the national perspective also.

(ii) He opposed the idea of captive mining lease on the ground that:

(a) There is tendency of captive mine owner to capture more mining area so that the can use it for longer time. This way they are able to debar the new entrepreneur to enter the same industry.

(b) Captive mining results in to wasteful mining as the grades not required by captive users are thrown away or not utilized.

(c) Many times captive users do not go for beneficiation or processing of ore.

(d) Captive mine is not in the interest of such captive users due to risk of strike, breakdown of machinery.

(e) He suggested developing iron ore mining as a separate industry.

(f) He suggested that government should not come in the way of market mechanism by restricting export.

(g) 2/3rd of mining leases are not working even than there is no shortage of iron ore for domestic users. In support of his view he stated that the production of steel has increased from 34.248 million tones in 2003-04 to 34.8 million tones in 2004-05 whereas the production of steel has increased from 120 million tones to 145 million tones during the period.

10. Shri Ashish Das, Director (Raw material & Corporate Planning), SAIL accepted to
furnish a copy of the study undertaken by SAIL on the mining leases in India and other countries.

11. Shri M Brahmanandan, Chief Mineral Economist, Indian Bureau of Mines, in his presentation stated that:

   (i) IBM has prepared mineral inventory as on 1.4.2000 and next inventory would be as on 1.4.2005 and 1.4.2007. So data on mineral resources in forest and non-forest area, grade wise etc are available.

   (ii) IBM also compiles state wise, period wise data from the mine owners on production of mineral and publishes it.

   (ii) He agreed to submit the list of not operating mines.

12. Meeting ended with vote of thanks to Chair.

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MINUTES OF THE SECOND MEETING OF THE EXPERT GROUP HELD ON 22ND JUNE, 2005 IN STEEL ROOM AT 12.00 NOON UNDER THE CHAIRMANSHIP OF SHRI R.K.DANG ON FORMULATION OF GUIDELINE ON PREFERENTIAL MINING RIGHTS TO STATE GOVERNMENT UNDER SECTION 11(5) IN RESEPCT OF GRANT OF MINING LEASE OF IRON ORE, MANGANESE ORE AND CHROME ORE, TO CERTAIN PERSON.

1. The list of the participants is annexed as Annexure-I

2. Chairman welcomed the participants. He sought their co-operation in narrowing down to possible solution through focused discussion, on issues already circulated among the members in the form of questionnaire. He also invited suggestions outside the circulated note/questionnaire, if any. He stated that though the constitution of the group is concerning certain provisions of the MMDR Act but it may examine other related issues as well raised by members of the expert group. The first category would be to such suggestions that come up for formulation of guideline may facilitate the industry without suggesting any change in MMDR Act. These suggestions may be in the nature of administrative improvement in the system and to minimize the court cases which are major bottlenecks in the development of mineral based industry. The second category could be for those segments which would necessarily involve changes in the MMDR act and MCR Rules. In the third category, the committee would place those collateral issues like bio-diversity which are more critical and may not be within the preview of the MMDR Act. Committee has not come across any pro-active model in the Ministry of Steel or Ministry of Mines as to what should be done or need to be done to reconcile the apparent contradiction in the mining and environmental/wildlife issues. However though these issues are not within the preview of the Committee even then Committee may touch upon these issues. Considering above, the following issues were discussed in the meeting:

(i) **Mining of mineral whether independent industry or related to end use of the product:**

Initiating the discussion Chairman invited the opinion of members on the issue as to whether mining be regarded as independent industry or not?

Mr B. Muthuramm, M.D., TISCO suggested that mining should not be regarded as independent industry. He stated that around fifteen years ago when steel industry was not doing well, many companies in United States took the decision to hive off their captive mines on the ground that iron ore was a separate/independent business. Now after fifteen years all those companies are repenting this decision as it has cut the root of the competitiveness of the US industries.

Shri R.K.Sharma, Secretary General, Federation of Indian Mineral Industry (FIMI) and Shri V.K.Jain, Director (Production), National Mineral Development Corporation (NMDC)Ltd. supported the view that mining be regarded as an independent industry. A mineral resource/mining company has the specialization to undertake mining in eco-friendly and scientific manner which results in zero wastage of the mineral.

(ii) **Captive mining as raw material security to steel plants Vs Non captive mining for maximum utilization of production by specialised company in Mining:**

Chairman invited the opinion of the members as to whether the existing large integrated Steel plants need raw material security and to that extent should captive mining be encouraged. Further should the market forces be allowed to meet the requirement of raw material (iron ore) of smaller units producing sponge iron, pig iron, pellets, steel and mining be allowed as an activity itself, in such cases.
Mr B. Muthuramn, M.D.TISCO stated that captive mining may be given to those large integrated plants which are capable in fully utilizing the resources. In case of smaller plants their demand may be clubbed together and their requirement can be met by a mining company. He argued that, in India steel has a competitive edge for the nation due to availability of iron ore. Steel industry needs to be globally competitive in order to derive the economic benefit for the nation. Earlier there was a belief that a steel plant could be set up any-where and local availability of raw material was not a consideration for setting up the same. This is why steel plants were set up in Japan although it did not have required raw materials (i.e. coal and iron ore). In the last 10 years, however, slowly there is an increasing realization that steel making should be done at place where at least one raw material i.e. coal or iron ore is available. He suggested that steel plants should be set up at a place where raw material is available at a cheaper rate. This is the reason why foreign companies have shown interest in setting up steel plants in India. Captive mine is essential for the purpose of competitiveness of the industry.

Shri R.K.Sharma, Secretary General, FIMI opposed the captive mining concept on the ground that this concept is not being followed in the other iron ore producing country. Captive mine owners have surplus capacity. The captive owners too are selling surplus production of ore in domestic market or exporting it. These plants should first utilize the existing capacity. If more mining leases are granted to these captive mine owners then what would happen to their existing surplus capacity? The issue is relevant in the context that more than half of the mining leases are not operating. These plants must develop technology to utilize the low grade ore. He suggested that the best way of raw material security to steel Plants may be through price negotiation, long term contracts and equity participation in mining company. India has large surplus capacity of non-captive mines particularly in Orissa. A mining/resource company would fully utilize the production and would supply the lower or higher grade of ore as per the requirement of its consumer resulting in to zero wastage mining.

Mr Muthuraman, MD/TISCO stated that captive mining is not unusual practice as it is being practiced in Russia and Iran. Many Russian companies have their own captive mine. In Iran all steel company and mines are under Government control and thus can be categorized under captive mining. He suggested that India should develop such technologies which consumes all the available material whether it is lump or fine. The current problem of underutilization of resources in India is due to mismatch between the production and its consumption. To solve this problem encouraging beneficiation of fines and low grade ore should be made a priority. He also suggested use of mixture of high and low grade ore (like use of 65 to 75% sinter) in production of Steel.

Shri Moosa Raza, President, Indian Steel Alliance supported the view of MD, TISCO favoring captive mining. He stated that captive mining is not being practiced in other iron ore producing countries because every country has a different history for its development. All integrated steel plants with reasonable size should be given captive mine.

Shri V.K.Jain, Director (Production) NMDC opposed the captive mining concept on the ground that mining companies not only are capable to supply the raw material as per the requirement of steel plant but they undertake scientific mining with due emphasis and protecting the environment. NMDC was supplying iron ore to RINL, a steel plant which does not have captive iron ore mine & has been meeting its entire demand successfully. The company’s efforts in environment protection in donimalai were also noteworthy.

Shri S.S.Bhatnagar, Executive Director, Sponge Iron Manufacturers Association (SIMA) suggested for collective mining.

Shri A.K.Pandey, Addl Director (Business Planning), SAIL stated that it is the wrong notion that captive mines have idle capacity. He stated that earlier due to less demand of steel, its production was deliberately kept at minimum level. In support of captive mining he stated that
Indian steel industry is facing the problem of coal/coke so there should be surety of at least one raw material (iron ore) which is possible through captive mining approach.

(iii) **Preferential rights of government in the name of value addition**

Chairman thereafter invited the suggestion/opinion of the members on the issue of guidelines on preferential rights being formulated by State Governments in the name of value addition within the states. Shri Moosa Raza opposed guidelines on preferential rights framed by state government and stated that the policy of value addition within the state by State Government militate against the federal concept, integrity of nation, and total use of economic strength of the country. He cited a hypothetical instance of Gujarat Government stopping movement of oil/gas produced in the state in the name of value addition within the state. In the hypothetical situation, this would surely lead to a situation of total blockage of pipeline running from Gujarat to northern India. Thus the whole philosophy that value addition should be done within the state is totally wrong. He suggested that if at all some consideration is to be given that could be done in case of green field capacity. It means that preferential rights may be applied in case steel producing company if it approaches the state government for mining lease with the purpose of setting up a new steel plant. But it should not be asked for setting up the plant in the state in the name of value addition.

Shri S.R. Wate, Deputy Director, NEERI stated that free movement of raw material from one state to other state should not be curbed because mineral boundaries have not changed. It is the political boundary which has changed and this boundary is made purely for administrative purposes and not for business purpose. He suggested that finding the best location would be the right course of action and the best location depends upon not only on raw material but also on other factors like water, nearness to port, labour and flatness of land etc. State government may charge different royalty on the material moving out of the state due to reason that some value should be retained within the state. Thus there should not be any restriction on the movement of iron ore otherwise we would have a steel plant in a wrong state. He also stated that levies are justified as these are used for the development of people in the state.

(iv) **Ideal Minimum Size of the Mining lease**

On the issue of minimum size of mining lease Chairman suggested the level of 4 million tones per annum, may be considered as an optimum size of production, for grant of mining lease.

Shri S.R. Wate, Executive Director suggested that minimum size should be 10 hectare.

Shri Moosa Raza, President, Indian Steel Alliance suggested that 2MT production capacity may be regarded as reasonable size. A company with this size would have the financially and technically capability to exploit the mine appropriately in comparison to a smaller one. He stated that may mines have been spoilt in the past by the merchant mining companies because these mines were not appropriately exploited.

Shri R.K. Sharma, Secretary General, FIMI stated that it would not be appropriate to recommend 4MT or 10 hectare as the critical size for an iron ore mining operation. A decision on the minimum and economic size of the mine may be taken on the basis of location of mine. He quoted the example of Ramandurg which has been allocated to four mine owners by the state government.

Mr. Brahmanandan, Chief Mineral Economist, Indian Bureau of Mines (IBM) stated that IBM on the basis of its experience in Chiria and Donimalai mining region where small mine owner are successfully mining the iron ore, recommends 2 MT capacity as the idle size for mine. He also stated that minimum size of the mining lease is already been given under Rule 22B of MCR.

Mr. Mutthuraman, MD, TISCO suggested that committee should decide the minimum size of the mining lease on the basis of information which may be obtained from Australia and Brazil in respect of their norms for best economic size of mining. Chairman concluded that it is not possible to
define the minimum size of the mines, in general term. The minimum size may lie between 2 MT to 4 MT.

(v) **Underutilization or dormant mines:**

Shri Sharma, FIMI stated that the underutilization or non-operation of a mine is not due to the reason of pending mining lease application. Under MMDR Act mine owner can continue with the operation even if their applications are pending. The Mining leases are not in operation due to the problem of delay in environment and forest clearance. He stated that almost all the mining leases are situated in forest area so necessary changes in environment/forest law is required to reduce the delay in application for environment/forest clearance in case of mining lease.

Shri Muthuraman, TISCO stated that issue of dormant mines in cases of steel plants should be looked into with respect to the size of the steel plants. If a steel company owned four leases, it would not operate all the mines simultaneously. So in their case, the mine not in operation should not be regarded as dormant mine.

(vi) **Export of iron ore:**

Shri R.K.Sharma, FIMI supported export of iron ore stated that evacuation of surplus production in other States like Karnataka and Goa would suffer if captive mines are allowed to steel plant in Central and Eastern India and export is not allowed. The main concern of FIMI is how the production can be utilized in the country at economic price. The iron ore producers would not export the ore if remunerative price is available in the domestic market. He stated that during 2001-02 and 2002-03 the generation of fines from Kudremukh mines was 60% and 61% respectively. Ratio of concentrate has come down from 8% in 2002 to 5% in 2003. Thus, natural generation of fines during the mining and handling of ore is showing an increasing trend. Captive and non-captive mines are exporting these fines. Fines constitutes around 75% of iron ore export. Again, these fines are not required for the sponge iron ore units. Mining would be stopped as an economic activity if exports of iron ore are banned. Captive mine owners should not be allowed to sell the ore in domestic market or export. He also stated that the new plants which are coming up have to first solve the infrastructural problems. It would not be appropriate to stop mining till steel plants come up. He suggested that it would be inappropriate to think occurrence of boom in the steel industry of India in the pattern of China, till it actually happens.

Shri Muthuraman, MD, TISCO and Shri Moosa Raza, President ISA opposed the export of iron ore. Shri Muthuraman stated that export of iron ore should not be allowed if the future demand of iron ore in India has to be met. Government has a vision to facilitate increase of steel production in near future. Availability of iron ore would be thus critical. He stated that the production of steel in China has increased from 30 MT to 80 MT in fifteen years and it has increased to 230 MT now. If this trend is possible for China, the same may happen in case of India. He argued that India is the only country in the world which has raw material and population. The situation in Brazil should not be compared with India as Brazil has large reserve than India. He suggested that export of fines should not be stopped at once but in a phased manner.

Shri Moosa raza, ISA suggested ban on export of lumps. He suggested that whatever is not used in India may be allowed to export. He also suggested that all steel plants should expand agglomeration capacity within 5 year time frame. The ban on export of iron ore is necessary from conservation point of view.

Chairman concluded that ban on export of lump ore should be the policy of Government and steel industry should expand agglomeration capacity in a fixed time frame which may be 3 to 5 year.
(vii) **Should DR process plant (sponge iron plant) and mini blast furnace be discouraged?**

Chairman stated that there are three categories of DR plants in India i.e. large gas based Sponge/Steel Plant like JVSL, Steel plants using rotary kiln like Monet and small steel plants. Chairman asked Shri S.S.Bhatnagar, ED, SIMA (Sponge Iron Manufacturers Association) about the details of sponge iron plants in India. Sh. Bhatnagar informed that there are 152 plants in India out of which 3 are gas based and 149 are coal based. He could not produce the state wise details of sponge iron plants and details of small sponge iron plants which have mushroomed in the country. He stated that it is not possible to prepare a data bank of these small sponge iron plants due to remoteness of their location. Chairman invited the suggestion/opinion of members on the future of these small plants which are facing problem of downturn in prices and non-availability of raw material.

Shri Moosa Raza, ISA stated that government should not encourage sponge iron plants and mini blast furnace as these plants consume high grade of ore and coal and more energy but produces low metallic.

Shri Muthuraman, MD TISCO also supported the view of Shri Musa Raza, ISA on the view point. He stated that sponge iron technology is an expensive alternative technology to the intergraded steel plant. In case of mini blast furnace, this process has a good future if input mix of 40:60 in favour of sinter is used in the production process. Mini blast furnace may be regarded as a supplement to the integrated approach in view of non-availability of cooking coal. He agreed to submit a technical paper to Chairman indicating the latest trend in steel making.

Shri S.S.Bhatanagar Executive Director, SIMA also supported the view of ISA and TISCO in case of small sponge plants. He suggested that big players which are supplying the metallic to induction furnace should be encouraged. He agreed to submit a paper to the Chairman on production capacity of sponge iron industry.

(viii) **Environment & Forest Clearance issues:**

Chairman asked the FIMI, IBM and NEERI representatives as to whether they have developed/worked on any model to solve the problem or have any world class model on mining and environment. He requested them for necessary action in this regard. He suggested setting up a special body for the development of a model for which steel/mining companies would contribute.

(ix) **Whether royalty is legitimate claim to revenue?**

Chairman invited the opinion of the member on the issue, by asking that whether it would be appropriate to create a fund out of a certain percentage of royalty earned by the State Government, for development of tribal/forest area.

Shri M.Brahamandan stated that Government of Maharastra has already created a fund out of the royalty which may be equivalent to 5% of proceed earned by the state government every year. He agreed to submit the details to Chairman.

Shri V.K.Jain, Director (Production) NMDC suggested that such fund may be generated by the mine owner voluntarily. Royalty may be paid separately.

Shri R.K.Sharma, FIMI also supported the view of Shri V.K.Jain for generation of fund by the mine owner voluntarily.

Shri Moosa Raza, ISA opposed the view for generation of fund by the mine owner on the ground that this would amount to indirect compulsion. He suggested for single royalty.
Chairman concluded that it would be appropriate to devise a mechanism for generation of fund out of a portion of royalty earned by the state government which may be used for infrastructural/social up-liftment of the affected area. Chairman suggested that mine owner may contribute to Green fund out of a portion of royalty say 10% to be paid to the State Government.

3. Chairman requested the Members to submit their suggestion on delay in PL/ML and renewal etc. Shri Pandey/SAIL stated that SAIL has already submitted its suggestion.

4. Shri Moosa raza, President, ISA suggested that the subject matter relating to mining lease of iron ore, chrome ore and manganese ore which are the basic raw material used in steel industry, should be handled in Ministry of Steel in place of Ministry of Mines. He cited the example of coal mining being dealt with in Ministry of Coal. For this purpose he suggested changes in Allocation of Business Rules. All the members except Shri R.K.Sharma, FIMI accepted the suggestion. Shri R.K.Sharma suggested the matter relating to environment and mining should be dealt with in one ministry.

5. The meeting ended with vote of thanks to Chair.

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QUESTION No. 1: A view has been expressed that mining of these minerals should be treated as an independent economic activity like agriculture or industry, unrelated to end-use of the products. A somewhat contrary view is that mining of these minerals should be regarded as an essential primary activity relating to downstream manufacturing and value addition e.g. irons ore pellets, sinter, pig iron, steel, alloys. Please give your views with reasons

(I) National Mineral Development Corporation (NMDC) Ltd:

Mining of minerals should be treated as an independent industrial activity without linking it to end use product. Mined out product should be freely marketed commodity to user agencies such as sponge iron producers, pellet producers and steel producers.

(II) Tata Iron & Steel Company(TISCO):

Mining should not be regarded as an independent industry. Mining of these minerals should be regarded as an essential primary activity. Around fifteen years ago when steel industry was not doing well, many companies in United States took the decision to hive off their captive mine on the ground that iron ore was a separate /independent business. Now after fifteen years all those companies are repenting this decision as it has cut the root of the competitiveness of the U S steel industry.

(III) Federation of Indian Mineral Industries (FIMI):

Mining of minerals should be treated as an independent industry/economic activity. A mineral resource/mining company has the specialization to undertake mining in eco-friendly and scientific manner which results in zero wastage of the mineral.

(IV) Steel Authority of India Ltd.(SAIL):

Mining of iron ore should be treated as an essential primary activity relating to downstream manufacture and value addition like sinter, pellets, crude steel, finished steel etc. Iron ore is a non-renewal resource and it should be judiciously utilised for achieving the target of steel production of 110 MT in 2020.

(V) Essar Steel Limited

Mining of any mineral resource is essentially an activity relating to downstream manufacturing. Similarly, Iron ore, manganese ore and chrome ore are related activities of iron and steel making. Following are the reasons.

* If India allows stand alone units to do mining activities, then it will lead to large scale exports of ore from India. India has only 13 billion tonnes of recoverable ore reserves and therefore we need to use these ore reserves judiciously to increase value addition and employment within the economy like the way Mexico and China did.
* Australia could consider mining as independent economic activity only because it has huge reserves, limited population and poor steel production base. But Indian situation is altogether different.

* Steel making is a risky, cyclical & highly capital-intensive business. Also it has a long gestation period. Therefore, assured quality, long-term predictable ore supply linkage is prerequisite for a bankable, profitable and sustainable steel business.

(VI) **Government of Chhattisgarh:**

In the present era of globalisation and competition, providing level playing field to different players engaged in the same economic activity is necessary. In the area of steel/iron production, iron ore is an essential input. Most existing steel plants in the country have access to captive mines of iron ore. Therefore, it is imperative that the existing steel/iron plants not having access to iron ore mines as also the proposed steel plants, need to be given mining leases of iron ore mining.

In view of the historical fact that most steel plants have access to captive mines, it is necessary that mining of minerals required for steel/iron making must be regarded as an essential primary activity relating to downstream manufacturing of sponge iron, pig iron, steel, alloys etc. Treating iron ore mining as an independent economic activity would be discriminatory, inequitable and render the iron/steel projects, not having access to iron ore mines, unviable and non-competitive.

Minerals are natural resources like “alluvial soils” and “water”. Therefore, mineral based industry, and not the mineral per se, need to be compared with agriculture.

(VII) **Government of Orissa:**

Mining should be given the status of separate industry.

(VIII) **Government of Jharkhand**

Jharkhand is a newly created backward state, where 54% of the total population is below poverty line. The problem of unemployment has assumed large propositions, leading youths towards naxalism.

The state has mineral resources in abundance, which needs to be capitalized into solid gains for the state. This is possible only by promoting and according priority in setting up value adding mineral based industries, which shall not only provide direct and indirect avenues for employment but also shall provide valuable revenues to the state exchequer. Treating iron ore mining as a separate economic activity shall deprive the existing and proposed steel industries of the locally available raw material at cheaper rates in the present era of cut-throat global competition, which would be discriminatory and shall lead to steel projects becoming unviable and non-competitive.
QUESTION NO.2: A view has been expressed that preferential treatment should be accorded in the matter of PL/ML to those parties who undertake manufacturing and value addition to the mine minerals within the boundaries of the state. If you support this view, please explain:-

(i) Under what legal statute, is such discrimination permissible?
(ii) How will you reconcile with conflicting demands from states with coal or other raw materials resources?
(iii) Will it not have serious implications for the federal fabric if similar protective barriers are adopted by states endowed with agricultural surplus, energy surplus, port access and even market strengths etc.

(I) National Mineral Development Corporation (NMDC) Ltd:

Minerals are unequally distributed by Nature. Some states are richer in respect of certain minerals while others are rich in other minerals. Accordingly preferential treatment in the name of value addition will have far reaching implication affecting the principle of equitable distribution of mineral reserves in the country. Value addition should not be the sole criteria for grant of mining lease/prospecting license. Capability for systematic mine development with proper conservation and utilization of the mineral should also be included in the criteria for preferential treatment.

(II) National Environmental Engineering Research Institute (NEERI):

Free movement of raw material from one state to other state should not at all be curbed because mineral boundaries have not changed. It is the political boundary which has changed and this boundary has been made purely for administrative purposes and not for business purpose. Factors like availability of raw material, water, nearness to port, labour and flatness of land etc should be the deciding factor for setting up the steel plant. There should not be any restriction on movement of iron ore otherwise we will have a steel plant in a wrong state.

(III) Steel Authority of India Ltd.(SAIL):

Preferential treatment in the name of value addition is not in the national interest and against the national perspective. Market forces should decide the location of steel plants in the competitive environment as besides iron ore other raw materials such as limestone, dolomite, abundance of water etc are also required for production of steel.
(IV) **Federation of Indian Mineral Industries (FIMI):**

Globally, value added production is governed by the domestic demand of the country. For example, the growth of Chinese steel industry is mainly driven by ever increasing domestic demand and consumption. So, in India, strong domestic demand has to be created which can act as a cushion during international downward trend in steel sector for the domestic producers. This requires support from the government by promoting infrastructure and industrial development. Value addition can be automatically be encouraged by increased domestic demand. It cannot be forced on industry.

(V) **Indian Steel Alliance:**

Shri Moosa Raza opposed the guideline on preferential rights by state government. The policy of value addition within the State by State Government militate against the federal concept, integrity of nation, and total use of economic strength of the country. If the Gujarat Government, hypothetically speaking, stopped movement of oil/gas produced in the state in the name of value addition with in the state, this would lead to a situation of total blockage of pipeline running from Gujarat to northern India. Thus the total philosophy that value addition should be done within the state is totally wrong.

Preferential rights may be applied in case where steel producing company if it approaches the state government for mining lease for the purpose of setting up the plant in the state. But it should not be forced to set up steel plant in the state in the name of value addition.

ISA has no objection for giving preferential treatment by the State Government to the plants set up in the State in respect of new Greenfield projects. However, the interests of the national economy, the amount of total investment proposed, employment generation etc. are factors that will require to be considered.

(VI) **ESSAR Steel Limited:**

The status demand for value addition in own states for allocation of the ore resources is unreasonable and unjustifiable on both political and economical grounds. However under Section 11(5) of MMDR Act.(without insisting on value addition within the state):

**The first priority should be given to existing integrated steel plants who have no captive mines but have minimum 2 MTPA capacity or made investment of Rs. 5000 crores.**

**The second preference should be given to those existing integrated steel plants who are preparing to go in for Brownfield expansion.**

**Third preference may be given to Green field (New) Plants.**

(VII) **Government of Chhattisgarh:**

As per Article 297 of the Constitution, all offshore minerals and mineral oils vest in the Central Government. However, ownership of on land minerals continue to vest in states. The Parliament has the power only to make laws for development and regulation of minerals. As owner of on land minerals, the state in which any mineral is located, has to have priority for its use in other states and any law to be enacted by Parliament ought to provide for this. If the law relating to development and regulation of minerals does not contain such provision, the law itself would not be in the line with the constitutional provisions. Presently, section 11(5) of MMDR Act, 1957 allows...
changing of inter-se priorities for special reasons to be recorded in writing. If it not considered enough, clear provision should be made in the law to accord priorities to projects in the backward regions of the mineral producing states.

Further, most of on-land mineral deposits are located in the Fifth Schedule Areas. In Chhattisgarh, almost entire coal and iron ore deposits are situated in the Scheduled Areas inhabited by tribes. In respect of the Scheduled Areas, the constitution empowers the Governor of the concerned State to make regulations, which would have over riding effect even over the Acts of Parliament.

The comparison drawn in part (iii) of the question is not valid. Mineral as a natural resource need to compared with the natural resources like “alluvial soil” and “water”, which are necessary inputs to agriculture. Agricultural produce and power are, in fact, comparable with the products of mineral based industry like steel, aluminium and cement, and not with minerals as suggested in the question.

Therefore, minerals bearing state must be given priority for their use over other states. According such priority will help in correcting the regional imbalance, by removal of backwardness of the mineral bearing states, and would thus be in the overall national interest. If any existing law does not allow this, they should be amended so as to reflect the Constitutional provisions generally and in respect of Scheduled Areas in particular. The requirement of minerals of non-mineral bearing states can be met after meeting the legitimate requirement of the mineral owning states on priority.

One should not guided by the enactments as they exist today, but by the provisions of the Constitution mentioned above, which contains special provisions for certain areas.

(VIII) **Government of Orissa:**

Section 11 of MMDR Act enables the state government to exercise preference between two or more applicants. The act do not take in to account the credible investment plan, compulsory use of modern techniques and scientific mining, minimum economic size of mine, end use of the mineral, restriction on movement of ore beyond state or national boundary. With the sudden spurt in the growth of mineral based industries, and the increasing demand for iron ore, the mineral rich states are increasingly ken that their mineral wealth should be utilised as far as possible within the states itself, and that the end use of the mineral should also preferably be with in the state.

In order to accommodate the perspective of the mineral rich states, such states may be permitted to ensure their own guidelines with respect to value addition within the State, the establishment of plants and projects and the utilization of the ore for such industries.

There has been a lot of concern shown on restriction on movement of iron ore. There is a wrong notion prevailing in many quarters that the state government restricts movements of iron ore to other states. It is blatantly incorrect. In fact, out of about 35 million tones of iron ore produced in the state, hardly 7 million tones is used in the State and rest of it goes out. While the state government has no plan of restriction on movement, certainly it is entitled to promote value addition in the state. Iron ore being a bulky commodity, there can be a policy to promote plants in the vicinity rather than placing undue strain on the already strained railways and other infrastructure facilities in the country. Therefore, state government would strongly recommend that proximity to iron ore belt should also be one of the criteria in according preference among different parties.

(IX) **Government of Jharkhand**
The mineral resources of a state are finite and shall not last forever. The state should have right of according priority to such proposals, which are in conformity with objectives. Such as generating employment & enhancing its financial resources.

As owner of the on land minerals, the state should have right to give preferential treatment to suitable investment proposals. Presently section 11(5) of MMDR Act, 1957 allows changing of inter se priorities for special reasons to be recorded in writing. If it is not considered enough, clearer provision should be made in the law to accord priorities to projects in the backward regions of the mineral producing states.

Further, most mineral deposits of Jharkhand are located in the Fifth Schedule Areas. In respect of the Scheduled Areas, the Constitution empowers the Governor of the concerned State to make regulations, which would have over riding effect even over the Acts of Parliament.

The requirement of minerals of non-mineral bearing state can be met after meeting the legitimate requirement of the mineral owning states on priority.
QUESTION No3: Do you agree that scientific mining with optimum utilization of ROM requires a critical minimum scale of operation related to the industry of the mineral deposits but generally of the level of + 4 million tonnes p.a., if not, give detailed reasons?

(I) National Mineral Development Corporation (NMDC) Ltd:

Scientific mining with optimum utilization of ROM (Run of Mines) requires a minimum scale of operation and should not be less than 2.0 Million tones per annum. 4.0 M.T capacity is on higher side and may be beyond the investment capacity of small and medium scale operators.

(II) Steel Authority of India Ltd (SAIL):

Iron ore mines with processing capacity of 4 million tonnes per annum (MTPA) or more may be a desirable size of operation. However, narrow deposits may not be able to work for large capacity. Such deposits maybe operated at the level of 2 MTPA. Small size of mining may not afford scientific methods of mining.

(III) Indian Steel Alliance:

2MT production capacity may be regarded as reasonable size. A company with this size would have the financial and technical capability to exploit the mine optimally in comparison to the smaller mines which may not have the financial and technical capability. Many mines have been spoilt in the past by the merchant mining companies because these mines were not appropriately exploited.

(IV) Federation of Indian Mineral Industry (FIMI):

It would not be appropriate to recommend a 4MT capacity or 10 hectares area as the critical size for an iron ore mining operation. A decision on the minimum and economic size of the mine may be taken on the basis of location of mine.

(v) Indian Bureau of Mines (IBM):

On the basis of experience in Chiria and Donimalai mining region where small mine owner are successfully mining the iron ore, 2 MT capacity may be recommended as the ideal size for mine. Minimum size of the mining lease is already given under Rule 22B of Mineral Concession Rule.

(VI) Tata Iron & Steel Company:

A decision on the minimum size for scientific mining should be taken on the basis of a study undertaken in respect of norms for best economic size of mining in Australia and Brazil.

(VII) National Environmental Engineering Research Institute (NEERI):

The present limit of minimum 5 ha for individual mine lease as per MoEF stipulation maybe revised to minimum 10 ha so that higher production potential through scientific mining and adequate funds for EMP can be possible. Consortium comprising small lease owners can be granted combined lease for 10 ha mine area if single bidder is not in position to lease out 10 ha.

(VIII) State Government of Chhattisgarh:
There is no denying the fact that mining of minerals has to be systematic and scientific. But the State Government does not agree with the proposition that large mines of the size of 4 million tonnes per annum or more alone would ensure scientific and systematic mining.

In the present era of fast changing technological innovations, there are technologies which ensure efficient and scientific mining over smaller areas and capacity even better than large mining projects. In this age of globalization and competition, putting restrictions of size etc. as suggested in the question, would be restrictive and unreasonable, and would serve no purpose except to serve the interest of large mining companies at the cost of growth of smaller ones, which may be technologically more advanced and efficient.

(IX) Essar Steel Limited (ESL)

ESL agrees with this. There exist substantial inefficient, small scale, unscientific mining in India due to irrational allocation. In ESL’s view sub optimal leases must be discouraged.

To encourage scale based mining, allocations should be made only to those steel producers who have minimum 2 MTPA capacity or have invested over Rs.5000 crores. For the use of small steel and sponge iron ore plants, mining leases may be awarded to a consortium.

(X) Government of Orissa:

In the MMDR Act there is no provision by which it can be ensured that the lessee undertakes scientific mining and the use of the most modern techniques. All that required under Section 5(ii) is that there should be a mining plan duly approved by the Central or State Government. Usually, this becomes a mere formality. In practice, the mining plans are rarely adhered to; nor do lessees bring in scientific or modern methods. As a result mining industry is largely plagued by antediluvian practices, labour intensive methods, very poor productivity, unbridled stripping of mines, and adoption of selective mining to recover high grade ores and absolute disregard for environment friendly practices and mine closures. Given the above background, the initiative taken by the Ministry of Steel with regard to comprehensive review of the MMDR Act, 1957 is both timely and constructive. It is suggested that section 5 and 11 be thoroughly revamped and reworked in order to bring in the following consideration:

(a) Condition should be prescribed to ensure that the mining plan is both comprehensive and environment friendly.
(b) Any deviation, from such a plan should carry severe penalties;
(c) Modalities should be evolved to closely monitor the mining activities of the lessee and in case of breach of lease conditions the State Government should have the power to stop the mining activity.
(d) The lessee should be bound down to the use of modern and scientific methods;
(e) The capability and capacity of the lessee to use modern and scientific techniques should be carefully assessed.
(f) The lessee should be bound to carefully extract and utilise the entire ore content of the mine;
(g) Severe penalties should be prescribed to ensure that mine closure is invariably carried out in an environment friendly manner.
(h) Minimum size of iron ore mining lease should be 10 hectares to ensure scientific mining.

State government supports the idea that there should be a minimum area for scientific mining. However, there are scattered deposits in some of the areas. The sizes of the scattered deposits are sometimes very small which do not leave any
room for scientific mining. These are better exploited through manual mining, which gives rise to a good deal of local employment. In fact, the bulk of employment in the mining belt comes from these small deposits where manual mining is done. SO while supporting the concept of minimum area, due exception has to be made for such scattered deposits where, more than scientific mining, employment generation should be the criteria and there should be no lower limit for the mining area.

(XI) **Government of Jharkhand**

It is agreed that the mining operations should be carried out in systematic and scientific manner to optimally utilize the ROM. But to restrict the mine size to the level of 4 million tonnes per annum or more would be a bit out of context in light of better and efficient available technologies.

The size of mining would also be dependent on the quantum of mineral reserves and their quality. Thus, putting statutory restrictions of size etc. would be unreasonable. Although, it must be ensured that no mineral should be allowed to be wasted during the mining process.
QUESTION No.4: A view has been expressed that DR process is essentially dependent on highest quality and hard lumpy iron ore leaving the bulk of the ROM under utilized or to be absorbed by other users. The incentive to produce CLO results in excessive generation of fines for which there is inadequate agglomeration capacity at present. Moreover, it is stated that the small vertical shaft sponge iron plant, with available quality of coal produced material with low metallization, scarcely qualifying as value added product. Therefore, should DR industry be discouraged and if not, how should its requirements of high quality iron ore and superior coal be met?

(I) Essar Steel Limited

Under utilization of fines does not arise in the case of those producers who follow Pellets route to produce DRI. They use 70-80% of pellets for steel making which is made only from fines. Even in usual case, mining of every tonne of lumps generates nearly 3 tonnes of fines. Therefore, pellet based DRI plants needs to be encouraged and they should also get preference in allocation of leases of high-grade iron ore blocks.

(II) Government of Jharkhand

Technologies keep on improving. As on date DR industry should not be discouraged as they are using non-coking coal, in built power generation technology and these are available from 100 tpd capacity onwards.

(III) Government of Chhattisgarh

In the present era of competition and globalization, choice of technology is best left to the industry. Prescribing preferential treatment to any particular technology and putting restriction on others would, de facto, amount to bringing back controls of the “licensing era”. This would be a retrograde step. If it is considered necessary to prescribe some norms, the same should be prescribed in terms of efficiency, output standards, leaving the choice of technology to the companies.
QUESTION NO.5 What is the rational for mini blast furnace plants which have no agglomeration facilities and are, therefore, dependent on selective availability of lump ore leading to selective mining. Even otherwise, are such plants energy and resource efficient as compared to integrated steel plants of critical mass? Would you agree that such stand alone mini blast furnace plants should be discouraged? Please give your views with reasons.

(I) National Mineral Development Corporation (NMDC) Ltd:
Indian Iron ore constitutes 15% high grade containing Fe % above 65, 44% medium grade of Fe% between 62 to 65 and 30% low grade with Fe% below 62. Reduction processes consuming medium grade would be desired from mineral conservation point of view. Further, Direct Reduction process requires hard lumpy ore. To produce more lumps, generation of fines will be more. Export of lump ore should be discouraged to meet the domestic demand. Adequate facilities should be created to convert the fines into agglomerated ore—like pellets to take care of requirement of DR industry Surplus fines can be exported.

(II) Indian Steel Alliance (ISA):
Government should not encourage sponge iron plants and mini blast furnace as these plants consume high grade of ore and coal and more energy but produce low metallic.

(III) Tata Iron & Steel Company:
Sponge iron technology is an expensive alternate technology to the integrated steel plant and it should be discouraged. The mini blast furnace route has a good future if input mix of 40:60 in favour of sinter is used in the production process. Mini blast furnace may supplement the integrated steel plants in view of non-availability of coking coal.

(IV) Sponge Iron Manufacture Association (SIMA):
The DR process technology (sponge iron) at small scale should be discouraged. The big players which are supplying the metallic to induction furnace should be encouraged.

(V) Steel Authority of India Ltd (SAIL):
In the process of iron ore mining, lump and fines are produced. The mining is carried out based on cut-off range. The product can be divided into medium grade, high grade- lumps and fines. All the products should be marketable. Selective mining of high-grade ore for DR process should not be allowed. Mini blast furnaces are dependent on selective availability of iron ore lump leading to selective mining. These blast furnaces have less resource/ energy efficiency compared to large size blast furnace. Stand-alone mini blast furnaces may not be comparable in terms of mineral conservation. Hence, mini blast furnaces on stand-alone basis should be discouraged.

(VI) Essar Steel Limited
ESL agrees that stand alone mini blast furnace plants should be discouraged as they are inefficient in operation, use more energy, create more pollution and put greater pressure on ore resources (ore to steel conversion ratio is high).

(VII) **Government of Chhattisgarh:**

In the present era of competition and globalization, choice of technology is best left to the industry. Prescribing preferential treatment to any particular technology and putting restriction on others would, de facto, amount to bringing back controls of the “licensing era”. This would be a retrograde step. If it is considered necessary to prescribe some norms, the same should be prescribed in terms of efficiency, output standards, leaving the choice of technology to the companies.

(VIII) **Government of Jharkhand**

It would be desirable if the choice of technology is available with the investor. According preferential treatment to a particular technology tantamount to restricting the options. Yet the market forces themselves decide the best technology suitable to a particular environment. Of late some of the stand alone Mini Blast Furnaces (MBF) are going for setting up of their own sintering plants.
Q.6 Do you agree that export of iron ore, manganese ore and chrome ore should be sharply tapered off, if not altogether stopped? How to stabilize prices of iron ore, manganese ore and chrome ore at reasonable levels for domestic industry even when world prices experience excessive volatility?

(I) National Mineral Development Corporation Ltd:

Export of any mineral should not be stopped altogether. No country has within its border adequate production and resources of all the minerals needed for its industrial development. Minerals have international character of occurrence. The unequal distribution on earth also makes the international trade inevitable.

It is thus obvious that the international trade has to continue. The point to be seen is how much can be spared for export without jeopardizing the country’s present and future need. The raw material being natural reserves should be available adequately for the domestic industry and exports should not be at the cost of domestic industry.

(II) Steel Authority of India Ltd. (SAIL)

Generally, export of iron ore should not be encouraged. The qualitative ceiling of high-grade iron ore should be revised from 64% to 63% Fe. The quota for iron ore export can be fixed on annual basis with annual review mechanism. It may not be possible to stablise the prices of iron ore in the free market economy. The prices of iron ore will increase with upturn cycle and decrease during down turn cycle of steel industry.

(III) Federation of Indian Mineral Industries (FIMI):

There should be no ban on export of iron ore whether of fines or lumps. Export of iron ore acts a cushion against fluctuations in domestic demand and vice versa and help in better unit realization. In India increase in production of iron ore is export driven. Domestic demand of iron ore has increased by about 9% in 2002-03 and 10% in 2003-04 whereas the production of iron ore has increased by about 15% in 2002-03 and 22% in 2003-04. The increase in production of iron ore is minimal in the states having steel plants whereas the increase in production is maximum in the states (Goa, Karnataka, Orissa) where steel plants are not located. The consequence of ban on export would be:

- Glut in domestic consumption nor required by the domestic iron and steel industry.
- Imbalance in regional surpluses such as Karnataka, Goa and Orissa which do not have or have limited domestic outlet.
- Closure of mines resulting in to unemployment, creating socio-economic unrest.
- Mines once closed will be difficult to restart as there will be water-logging in the already mined pit during rainy season which may result in the mineral deposits being lost forever.

The main concern of FIMI is how the production can be utilized in the country at economic price. The iron ore producer would not export the ore if remunerative price is available in the domestic market. He stated that during 2001-02 and 2002-03 the generation of fines from Kudremukh mines was 60% and 61% respectively. Ratio of concentrate has come down from 8% in 2002 to 5% in 2003. Thus, natural generation of fines during the mining and handling of ore is showing an increasing trend. Captive and non-captive mines are exporting these fines as it
constitutes around 75% of their export. Again, this fines is not required to the sponge iron ore units. Mining would be stopped as economic activity if exports or iron ore are banned. Captive mine owner should not be allowed to sell the ore in domestic market or export. He also stated that the new plants which are coming up have to first solve the infrastructural problem. So it would not be appropriate to stop mining till steel plants come up. He suggested that it would be inappropriate to think occurrence of boom in the steel industry of India in the pattern of China, till it actually happens.

(IV) Tata Iron & Steel Company:

Export of iron ore should not be allowed if the future demand of iron ore in India has to be met. Government has the vision to facilitate increase of steel production in near future. Availability of iron ore would thus critical. Production of steel in China has increased from 30 MT to 80 MT in fifteen years and it has increased to 230 MT now. If this trend is possible for China, the same may happen in case of India. India is the only country in the world which has raw material and population. The situation in Brazil should not be compared with India as Brazil has large reserve than India. Export of fines should not be stopped at once but in phased manner.

(V) Indian Steel Alliance:

The ban on export of iron ore is necessary from conservation point of view. Only surplus production should be allowed to export. Fines may be allowed for export as these are currently not in much demand in Indian domestic market. All steel plants should expand agglomeration capacity within 5 years time frame.

(VI) Government of Chhattisgarh

In a country where employment generation is one of the basic objectives of the development plans of the Central and the State Governments, export of raw material must be discouraged to see that maximum value addition takes place within the country. Assured supply of raw material in adequate quantity at prices which make the new domestic industry viable vis-à-vis the existing domestic industry (having access to cheap raw material from their captive mines) is essential. Moreover, allowing export of iron ore from a backward region like Chhattisgarh, where local industry’s requirement is not being met, has no justification. Any export of iron ore, manganese, etc. would be at the cost of loss of new employment opportunities in the country and, therefore, the same needs to be discontinued.

(VII) Government of Orissa:

In general, it should be discouraged if there is an internal demand for it. Only such of the minerals which have no domestic demand (presently iron ore fines and low grade mineral) should be exported. No mineral should be allowed to be exported unless the export price is substantially higher.

(VIII) Essar Steel Limited

ESL supports to the view that export of all types of non-agglomerated ore should be eventually stopped altogether. Following are the rationales.
- Although India has total proven reserves of 17.7 billion tonne (BT), yet recoverable reserves is only about 13 BT.
- As the economy grows, India’s demand for steel would increase. The proposed national steel policy projects 90MTPA of steel demand by 2020. Mckinsey projects India’s potentials to reach 150 MTPA by 2015.
- Moreover, India’s steel per capita consumption is very low at 31 kg against world average of 170 kg and China’s 202 kg.
- Developed country status for India would mean sustainable per capita steel consumption at 300 kg in times to come. For which India would require to produce 478 MTPA of steel.

<table>
<thead>
<tr>
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<th>Year 2020</th>
<th>Year 2050</th>
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<tbody>
<tr>
<td>Per capita steel consumption (kg)</td>
<td>75</td>
<td>150</td>
</tr>
<tr>
<td>Required Production (MTPA)</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Ore Demand (1.6:1) MTPA*</td>
<td>160</td>
<td>320</td>
</tr>
</tbody>
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* Assuming that metallic demand for production of steel that goes for export market would be fully met by scrap.

- India needs to gradually phase out Iron ore exports altogether. This can be achieved by two ways: (1) Allocation of sizable iron ore mines only for captive consumption of steel companies, (2) Encourage domestic steel production through pellet based iron making route.

(IX) Government of Jharkhand

The particular status of Jharkhand necessitates to accord highest priority for employment generation. Export of raw materials must be discouraged to ensure maximum value addition within the country. As against the popular belief, the resources of Iron, Chromite and Manganese ore rather limited and with expansion of steel industry to about 120 MTV by 2019-20 and additional beyond it, the availability of Iron ore for domestic market shall be severely constrained.

In the present era of open international trade, it would be difficult to enforce protectionist measures to stabilize prices of Iron ore, Manganese ore and Chrome ore for domestic industry. By providing better and congenial industrial environment, perhaps the domestic industries may be encouraged and promoted.
Q.7 what needs to be done about the large number of mining leases, lying dormant or under utilized for number of years? Why these leases are not terminated as per the MMRD Act and Mineral Concession Rules?

(I) National Mineral Development Corporation Ltd:

In accordance with the Rule 28 of MMRD 1960 State Govt shall by order declare the mining lease as lapsed if the mining operations are not commenced within the two years from the date of execution of lease. But there are provisions in its rules that if non-commencement of the mining is on account of delay in getting surface rights delay in getting possession of leased area delay in the supply of machineries, delay in market tie up and alike the lease would not be lapsed.

Around 400 mining leases in iron ore only have been idling, dormant or under utilized for number of years. If they are dormant on account of any of the reasons noted above, they can escape determination of lease. This need to be examined by a Committee specially constituted for the purpose.

(II) Steel Authority of India Ltd. (SAIL)

The production of iron ore is linked to its demand. With the growth of iron & steel industry, the consumption of iron ore increases. Govt. of India has granted large number of mining lease for captive consummations by steel plants. These mines have judicially utilized iron ore as a resource to meet its long-term requirement. The iron ore mining leases granted for captive use should not be cancelled as they are linked to long term requirement.

(III) Federation of Indian Mineral Industries (FIMI)

The underutilization or non-operation of a mine is not due to the reason of pending mining lease application. Under MMDR Act mine owners can continue with the operation even if their application are pending. The problem of dormant mines is due to the problem of delay in environment and forest clearance. Almost all the mining leases are situated in forest area so necessary changes in environment/forest law is required to reduce the delay in application for environment/forest clearance in case of mining lease.

(IV) Tata Iron & Steel Company:

The existence of dormant mine in cases of steel plants are due to reason that steel plants undertake mining as per the requirement of production plan which depends upon the demand of the products. If a steel company owned four leases, it would not operate all the mines simultaneously. So this fact should be taken in to account while deciding the dormancy issue.

(V) Essar Steel Limited

The problem of lease squatting is too well known. As per the Steel Policy of the over 600 iron ore leases only about 245 are operational, rest are paying dead rent and are thus idling. This is all an opportunity loss an tantamount to “Sleeping ore” These are not terminated because of (a) litigation process, (b) nexus with the government officials, and (c) complex cancellation procedures.

(VI) Government of Chhattisgarh
Mining leases, which are dormant or under utilised for a number of years, should be cancelled and, where their renewals are due, they should not be renewed. Further, such companies should not be granted any fresh leases for the same mineral.

(VII) **Government of Jharkhand**

The particular status of Jharkhand necessitates to accord highest priority for employment generation. Export of raw materials must be discouraged to ensure maximum value addition within the country. As against the popular belief, the resources of Iron, Chromite and Manganese ore rather limited and with expansion of steel industry to about 120 MTV by 2019-20 and additional beyond it, the availability of Iron ore for domestic market shall be severely constrained.

In the present era of open international trade, it would be difficult to enforce protectionist measures to stabilize prices of Iron ore, Manganese ore and Chrome ore for domestic industry. By providing better and congenial industrial environment, perhaps the domestic industries may be encouraged and promoted.
Q.8 What are the reasons for present excessive time taken in processing PL/ML and which are the pressure points? Please furnish checklists and suggestions for streamlining and expediting the processes. How can we work towards a transparent single window clearance system? Will it be reasonable to work towards a target of six months for all renewal/grant cases?

(I) National Mineral Development Corporation Ltd:

Excepting for the reconnaissance permit, to obtain prospecting and mining lease several steps are to be followed before these are granted. A brief account of steps is as follows:

Prospecting Licenses (PL)
1. Application to be made in form ‘B’ and ‘C’ (for fresh grant or renewal as the case may be) along with the required documents to the Asstt. Director of Mines and Geology.
2. He, in turn, sends a copy to Mandal Revenue Officer to ascertain the category and availability of land for grant.
3. Mandal Revenue Officer will send the report to Mines & Geology Department duly marking a copy to the district Collector.
4. The District Collector will send the recommendations to the Director of Mines and Geology.
5. Director Geology and Mines (DGM) of the State, after verifying the application and confirming the availability of the area etc., submits the same with proper recommendations to the Secretary of the concerned department of the State Government for approval.

Mining Leases (ML)
1. Application to be made along with the required documents as per MCR 1960 to the Asstt. Director of Mines & Geology.
2. He will send a copy of application to the Mandal Revenue Officer to ascertain the category and availability of land for grant.
3. The Revenue Officer will send report to the Asstt. Director of Mines & Geology duly marking a copy to the Distt. Collector.
4. The Distt. Collector will send his recommendations to the Director, Geology and Mines.
5. Director, Geology and Mines, after verifying the application, availability of the area etc., submits the same with proper recommendations to the Secretary of the concerned Department of the State for approval.
6. If the lease is granted, the decision will be conveyed to the concerned Collector and one copy is endorsed to the director, Geology and Mines.
7. In case of first schedule minerals, the State Government has to obtain prior approval from the Central Government.
8. After such approval is obtained, the applicant will be advised to submit the approved mining plan within 6 months incorporating the environment management plan.
9. After the receipt of the approved mining plan, the State Government finally grants the mining lease to the applicant.

It can thus be seen that there may be 17 steps involved for taking a virgin area to the stage of mining lease. And for areas requiring forest and environmental clearances additional six steps are necessary. To shorten the gestation periods of mineral deposits, procedure and time frame for grant of PL/ML need to be standardized.

It is felt that in case of PL the whole procedural steps can be completed within a period of 3 months and in case of ML 6 months. If forest and environmental clearance are required for the grant of PL/ML, the periods should be 9 months and 12 months. The transparent single window clearance can be possible if the entire process is attended to at the respective collectorate which can be made nodal point.
(II) **Steel Authority of India Ltd. (SAIL)**

The grant of mining lease particularly for iron ore takes about 7/8 years time. It requires approval of mining plan by Indian Bureau of Mines (IBM), grant for forest clearance by MoEF, GoI and grant of environmental clearance by MoEF, GoI. Separate applications are required to be submitted by the applicant for these are required to be submitted by the for these clearances. Interdependence between different agencies, delays the process. Even though time frame for approval of ML is 12 months and for forest clearance is 7 months, but it is never adhered to. The major part of the delay takes place in the processing of forest clearance application at the state level. Enumeration of trees, cost benefit analysis take long time. For expediting grant of mining lease, forest & environmental clearance the only solution would be to aim for single window clearance concept. For this a nodal agency comprising of a representative of State and Central Govt. from mines, forest, environment deptts. can be constituted and the single application received from proponent be scrutinized by the nodal agency. In our opinion it may be possible to grant these clearances in 12-18 months time. However, the target of 6 months as indicated seems to be challenging. Flow chart for obtaining PL/ML, Forest clearance and Environment clearance are placed as annexure I, II & III.

(III) **Federation of Indian Mineral Industries (FIMI)**

(a) **For conveying State Government approval**

At present MCR, 1960 provides that the State Government can follow its own procedures for receipt of applications for mineral concessions. In most cases these applications are received in the office of the District collector. However, if the mining area lies in the more than one district then more time is consumed. The movement of mining proposal travels from Collectorate to Directorate of Mining and geology and then to state secretariat. Letter of interest is issued only after Minister concerned approves the individual application on file.

Since basic information required for every application for processing the application is available at the district level, including royalty clearance, availability of the area etc. particularly from the forest angle, until and unless such information is complete, the application is not considered further. There is no urgency in disposing of applications inspite of prescribed time limits. The applicant whose case is pending indefinitely further cannot file a revision application because no orders of the State Government have been passed, which may be challenged. The Government has earlier experimented with the concept of deemed rejection in such cases where the State Government did not pass any orders within a prescribed time. Such ‘deemed rejected’ applications inflated the number of revision applications filed with the Central Government, leading eventually to the amendment of the law to delete the provision for deemed rejection. For transparency and cutting short the delay, therefore a Committee system for consideration of applications (single window) seems to be desirable.

All applications for mineral concessions should be accepted centrally at the Directorate of Mining and Geology of the State Government and not at the district headquarters. It is desirable that a copy of the application, in all such cases where approval of Central Government is required under MMDR Act, 1957 and MCR, 1960 should be filed directly with the Central Government for present information and simultaneous processing.

The applications should be sent to the district level designated officers for scrutiny of the proposals with respect to the area being available for grant (revenue land or private
land), whether the area is a reserved forest or not, and existing information on mineral potential of the area applied for. The scrutiny at the district level office may be completed in three weeks’ time.

The State Government may set up an empowered committee at the State level with representation of the District Collector and the State Department of Environment and Forests. The Committee could meet on a designated day every month and provide the single window clearance. For transparency, the applicants could also be informed that their applications were being listed for consideration in a particular meeting, and if they so desired, they could be available for giving clarifications to the empowered committee.

The recommendations of the State level empowered committee shall be forwarded to the Ministry of Mines for further necessary action.

(b) For conveying Central Government approval

Since granting of mineral concessions involve competing interests with more than one applicant applying for the same area, there can be no concept of deemed approval. . .

When an application for major mineral’s mining lease application is recommended by the State Government for approval of the Central Government, inter alia the following are required in the Central Government for processing the case further.

- Completed Check list with documents mentioned therein
- Map of the area
- Justification for invoking discretionary power with the Central Government under various sections of the MMDR Act, 1957 and rules of the MCR, 1960
- Inter-se merits of various applicants for the area, in particular of previous applicants, if the recommendation is in favour of a later applicant. Copies of rejection orders of earlier applicants, if already rejected.
- Information on mineral availability/potential of the area concerned, with documentary evidence.

In most cases, it is found that the recommendations of the State Government are incomplete, and information is received only after repeated correspondence. In many cases, the recommendations are not processed any further and the files are closed after the State Government fails to respond. After comments and documents from the State Government are received, individual case files are put up for consideration and approval of the Minister in charge.

The delays arising due to protracted correspondence can be perhaps avoided if an empowered Committee in the Ministry of Mines takes up the cases for consideration in a periodic manner. The State Government(s) would be required to submit the merits of its recommendations in respect of various applications to the Committee. The recommendations of the Committee could be put up for acceptance by the Minister in charge, instead of the Minister approving every single recommendation in the concerned file as at present.

Many a times, it appears that the information furnished by the State Government while seeking approval of the Central Government are not complete in that information regarding other applicants for the area are not specifically mentioned. If an application requiring approval of the Central Government is also available with the Central Government, and it is found that within the stipulated time mentioned in MCR, 1960, relevant recommendation for the area concerned has not been forwarded by the State Government, it could be in the fitness
of things to list such applications also for suo moto consideration of the Committee, in which the State Governments would be required to give their views.

**For facilitation after approval**

Since reconnaissance operations mainly involve aerial surveys, inter-departmental coordination is required at the Central Government level for undertaking aerial surveys under RP. The various bodies involved in the exercise involve the Ministry of Mines, DGCA, Ministry of Defence, IB, Department of Atomic Energy, GSI, NRSA and the Department of Telecommunications.

At present, after the Department of Mines conveys the approval for grant of RPs, the applicant is entitled to file application with Director General of Civil Aviation (DGCA) for the permission for airborne survey. (However, in most cases the applicant waits for the Letter of Intent to be issued by the State Government concerned before applying for the airborne survey. This is primarily because the applicant prefers to involve the State Government as well, since inception).

After the application for airborne survey is received, the DGCA routinely sends off the copies to various Departments. While the Ministry of Defence normally takes about 45 days to complete their internal examinations, which primarily involve obtaining comments of individual Divisions and Departments, Ministry of Home Affairs takes about 30 days for the purpose. The final approval decision is taken on the files of the Ministry of Civil Aviation and conveyed by DGCA.

It thus appears that for reconnaissance operations, for granting permission for aerial reconnaissance there is a need for a single window clearance. The empowered Committee in the Ministry of Mines, with participation of DGCA, Defence and IB could accord the permission for the aerial survey.

Other than permission for aerial survey, post approval coordination involves the Ministry of Environment and Forests. Issues relating to clearances from environment and forest angle could also be discussed and finalized in the empowered Committee with participation of appropriate officers nominated by the Ministry of Environment and Forests on the Committee.

The composition of the Committee, therefore, would have representative of Ministry of Mines, Indian Bureau of Mines, Ministry of environment and Forests, DGCA, Ministry of Defence, Intelligence Bureau and the State Government Concerned. The terms of reference of the committee would be to consider according Central Government approval to the mineral concession applied for, according permission for aerial reconnaissance and sort out issues regarding environment and forest clearances. For transparency, the applicants could also be informed that their applications were being listed for consideration in a particular meeting, and if they so desired, they could be available for giving clarifications to the empowered committee.

Proposed time frame for disposal of applications at different stages.
In view of the above, while a Committee approach could be prescribed for consideration of applications, the following time schedule could be prescribed for consideration at every stage:

<table>
<thead>
<tr>
<th>Stage</th>
<th>RP</th>
<th>PL</th>
<th>ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary scrutiny of applications as per checklist in the office of DMG(HQ) and forwarding the completed applications to the District level office</td>
<td>7 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrutiny of applications at the District level and to invite report from all concerned Departments</td>
<td>21 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearance from State Forest Department (FDO) under Forest Conservation Act, 1980, SDO/Tehsildar etc.</td>
<td>30 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single window State level clearances from the Empowered Committee</td>
<td>45 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue of sanction by the State Government</td>
<td>15 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Execution of lease agreement of RPs at the district level</td>
<td>Within 30 days of the issue of sanction letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(IV) Essar Steel Limited:

Lack of defined procedure both at the State Government and Center, is the main cause of the bureaucratic delays in grant of Mining Lease (ML) or Prospecting license (PL). Laying down procedures, accountability and monitoring can improve the situation largely. As per the present practice, the applications submitted by the party is examined basically by the three departments namely Revenue, Forest and Mining. Land records of the area are collected by the applicant and are signed by the concerned revenue and forest officials (this can even be made mandatory) and therefore it is just an authentication by higher officials namely tehshildar for revenue and D.F.O. for forest, to check the details given by their junior officials. Mining officials are to check the statement of the applicant about availability of reserves in the area or reported occurrence of the mineral.

* All these details are well known to theses officials. Thus, setting up of fast track single window clearance mechanism along with publication of procedures and laying down a time limit of 6 Months for Mining Lease and 3 Months for Prospecting License will make the entire system straight forward and transparent.

(V) Indian Steel Alliance:

Indian steel Alliance emphasizes the need of simplification of system and procedure and introduction of single window clearance of Mining projects. Even in developing counties clearance of large mining projects takes hardly 18 months where as, it takes almost 7/8 years in India. Time is of essence and cyclicity of Steel Industry has to be kept in mind from the recommendation to approval to granting to permission and clearances to plan approval to actual opening and exploitation of mine is too long a process. The cycle often turns and that leads to further delays and heavy losses. The process needs to be abbreviated and made fast. And this needs to be done not just for FDIs but for all investors on an equitable basis.
(VI) **Government of Chhattisgarh**

The main reason for the delays is the two stage clearance from:
- Ministry of Mines at Prospecting License (PL) stage and Mining lease (ML) stage.

The solution lies in changing the respective laws to provide for approval of the Ministry of Mines only at the PL stage and of MoE&F only for the stage-I clearance. The powers to grant mining leases in cases in which PLs are approved by GoI should be given to the states. Similarly, once GoI has given stage- clearance, the power to accord final clearance under the FCA, 1980 should be given to the states. In addition, powers to grant environment clearance needs to be further delegated to the states.

Regarding the issue of a single window clearance system the same does not appear to be feasible due to multiplicity of statutory agencies, some of which have been put in place under the directions of the Supreme Court namely, the Empowered Committee in the MoE&F and State Level Committees as per Supreme Court’s Samatha Judgement.

(VII) **Government of Orissa**

It is always necessary that all the renewal cases should be quickly disposed of so that additional ore bearing areas are mobilized to support the additional steel capacity. Is on the anvil. The biggest problem in the way, is the restriction caused by the Forest Conservation Act and in most of the iron ore leases, forest area is involved. The MOEF guidelines are required to be reviewed and modified for facilitating quick disposal of the renewal cases.

(VIII) **Government of Jharkhand**

The delay in the disposal/processing of PL/ML applications is due to various clearances required, as mentioned below:

(i) Ministry of Mines at PL/ML State.

The forest act in case of mineral concession needs revision since the legal status does not change. In case of other forest occupiers, the legal status changes from forest to non-forest. In case of dams/reservoirs etc. the forest is lost permanently. However, after the mine is closed, the land reverts back to the forest department. Thus, the procedure of forest clearance for mining industry should be different from others and less stringent.

Major time in forest clearance in taken at state level due to long chain of officials involved. There should be only three tiers-DFO, Nodal officer & Departmental Secretary rather than present seven steps for getting clearance.

If the power to grant ML in cases where the PL’s have already been approved by Government of India is delegated to the state and that with respect to granting stage-II clearance, where the State I clearance has been granted by Ministry of Environment and Forest under Forest Conservation Act, 1980, be delegated to the state, then the process may be expedited. For this, certain amendments in Forest Conservation Act, 1980 and MMRD Act, 1957 shall have to be made.
As far as setting up of single window clearance system is concerned, a system at the State level may be set up despite multiplicity of statutory clearances but it shall be difficult to set one single window clearance system at the Central Government level due to involvement of various agencies. The Steel Ministry may like to take lead and set up one such single window clearance system to facilitate expeditious time bound clearances.
Q.9 Please identify similar checklists of common reasons accounting for inordinate delay in disposal of Review Petitions with your suggestions for a time bound disposal. Would it be realistic to have a target of 9 months for disposal of a Revision Petition?

(I) National Mineral Development Corporation Ltd:

Review petition in Central Tribunal takes 2/3 years for disposal. It would be quite realistic if a target of 9 months for disposal is fixed. Many a time a committee constituted by the Central Government to look into the mining lease disputes, submits its report to the Government within a period of 3 months. Thus, it is possible that in similar way review petition can also be disposed of in a time frame of three to six months.

(II) Steel Authority of India Ltd. (SAIL)

The disposal of review petition by mining tribunal, Govt. of India does not take much time. However, State Govt. takes long time to implement the decision. In many cases, mining tribunal directs the State Govt. to review their decision; these cases also take long time.

(III) Essar Steel Limited:

Fast track mining tribunals with time bound litigation procedure have to be set up. And 9 month period is a realistic target.

(IV) Government of Chhattisgarh

In quasi-judicial matters, it may not be practicable to adhere to any specific time limits. It would be sufficient if reasonable/practical time limits are specified, which should be voluntarily accepted by the concerned authorities of the State and the Central Government.

(V) Government of Jharkhand

The disposal of review petitions is quasi-judicial in nature, which cannot be limited by any specific time limits.

Despite this, if time limits are set for disposal of such revisions petitions, it would be most welcome. The number of tribunals may be increase.
Q.10 A number of confrontational situations are developing between the interests of mining, forest conservation and environment protection. What are your specific suggestions to resolve these conflicts and harmonized interests of mining mineral resources with forest conservation and environment protection; (crucially important because of the occurrence of mineral zones mainly in forest and tribal areas)? Is it at all possible to conduct mining operations without damaging the forest resources, biodiversity and ecology? Please furnish details with appropriate technologies and examples, if any, available?

(I) **National Mineral Development Corporation Ltd:**

Under the Forest Conservation Act 1980 the entire power of diversion of forest land are vested in the central authorities. Only forest management is vested with the state government. Mining is a site specific activity. Mineral is to be mined only where it occurs. If it is forest land, it requires a coordinated action of mining professionals, state forest department and MOEF, Govt. of India to prepare a comprehensive mine development plan incorporating a simultaneous action programme towards conservation of forest resource and ecology. Many of the large mining organizations have already displayed that mining and ecology can coexist. It is thus suggested that to avoid any confrontational situation, a standing committee may be constituted by the central government which would consist of officials of mining sector, State Forest and MOEF, Govt. of India. The said committee would oversee the preparation of exploration and mining plan and implementation of action programme in actual mining.

(II) **Steel Authority of India Ltd. (SAIL)**

To avoid confrontational situation between the interest of mining, forest conservation and environment protection the following is suggested:

- A mapping to be carried out for the total iron ore area of the country.
- The area to be divided into 3/4 categories based on forest and environmental sensitivity.
- Most sensitive areas be prohibited for mining.
- The conditions for mining to be pre-determined for the areas based on its sensitivity.

It is possible to conduct mining operation with minimal impact on forest resources, biodiversity and ecology. This would require state-of-the-art technology for processing and beneficiation.

(III) **National Environmental Engineering Research Institute (NEERI):**

(a) **Guidelines for Dumping Sites:** The large mine lease owners have environmental awareness and enough land to select proper dumping sites. However, small and medium mine lease owners (<50 ha) are granted approval for bare minimum mine lease area where enough land is not available for dumping of overburdens (mostly at the top of the of the hill where iron ore mines are present), the mine lease owners start dumping overburdens on the slope of hills, damaging the biodiversity on hill slopes and valleys and generating polluted leachate water, which may pollute downstream surface and ground water and the land. The surface water, thus polluted by leachate water, is deleterious for wildlife as well as for domestic consumption by human beings. Some of the big mine lease owners also resort to dumping overburdens on hill slopes to save money.
Therefore, following guidelines for disposal of overburden may be mandatory in scientific mining.

1) Ban on dumping of overburdens on hill slopes
2) Selection of one or more common dumping sites satisfying technical requirements of landfill, catering to the needs of a consortium of mines around the dumping site
3) Adoption of scientific methods (for ex. Using Rhizobium culture) for re-vegetation of overburden dumps
4) Collection, treatment and disposal of polluted leachate water
5) A slope from 10-30% is found to be suitable for overburden dumps to support fair vegetal cover and to and to minimize soil infiltration and generation of leachate.

(b) Guidelines to Minimize Dust and Noise Pollution:
Most of the mining regions in India are mostly affected by dust pollution and noise pollution, due to road transport of heavy trucks for carrying extracted ore to its destination on haul roads. This has deleterious effects on forest vegetation, plant diversity, agricultural production, public health, and behavior, breeding and nesting sites of wildlife.

General guidelines to reduce dust and noise pollutions are given below:

- To minimize transport on haul roads,
- Stabilization of surface of haul loads and overburdens,
- Adoption of conveyor belt system or rail transport to carry ores and overburdens to their respective destination,
- Use of good quality machinery and transport vehicles and their proper maintenance to reduce noise levels in mining areas and along transportation routes.

c) Augmentation of Water Resources and Local Green Cover
Major component of Environmental Management Plan will be afforestation in non-mining areas and drainage water basins
Implementation of water harvesting and infiltration technology to augment surface and ground water recharge to meet the present and future needs of mining industry and local population. These activities need to be carried out by a Green Corpus Fund to be raised jointly by mine owners and State Government and implemented by local govt. administration.

d) Grant of Sanction/renewal of mine lease area should be in accordance with scientifically and technically sound 5 yearly development plan and can be further revalidated progressively maximum upto 30 years depending on

(IV) Essar Steel Limited:
All recoverable mineral deposits should be mapped with necessary details for the purpose of forest and environmental clearance. Based on this information the government has to decide in advance whether to allow mining in that area or not and if yes, it has to lay down area-wise conditions for mining. Once this has been done, PL and ML should be allocated at one go as there is no need of forest ore environment clearance for each mine.

(V) Government of Chattisgarh
In so far as Chhattisgarh is concerned, total mineral bearing area is not even 2% of the total forest area. The damage to bio-diversity by mining activity needs to be appreciated in the light of this basic fact. The real damage to bio-diversity takes place from unscientific and illegal mining. If legitimate legal mining is restricted, there is bound to be more loss to environment and bio-diversity from consequential illegal mining. Therefore, clearance should be accorded to all mining projects where scientific and systematic mining is to be undertaken without any apprehensions and reservations, to ensure that the need of the downstream industry is met in full. This would help in keeping a check on the illegal mining and thereby damage to the biodiversity.

(VI) **Government of Jharkhand**

There are many world wide examples of conducting mining operations with least damage to forest resources, bio-diversity and ecology.

The real damage is caused due to unscientific and illegal mining. Thus clearances should be accorded to all such mining projects where scientific planned and systematic mining is involved without any reservation or apprehension to promote mining and develop mineral based industries.

The mining carried out by ALCOA in Huntly (Western Australia), where dense 'Jarrawah' forest are located is a living example in this context.

Even in India TISCO in Noamundi and SESA GOA in Goa have set up such examples, which needs to be emulated.
Q.11 A view has been expressed that royalty accruing to the State Govt. under the MMDR Act is the only legitimate claim to revenue. How can royalty be charged on ad-valorem basis and if so, on what rates? Would it not be better to have adequate rates of royalty rather than seek to impose collateral levies and cesses which may or may not be legally tenable? Would it not be better to sequester compulsorily same preparation of royalty in a separate fund for development needs of the local, tribal and weaker sections in mining areas, rather than imposing other levies and making informal demands on mine operators which are viewed as harassment?

(I) **National Mineral Development Corporation Ltd. (NMDC)**

It is true that the royalty accruing to state Govt. under MMDR Act is the only legitimate claim to revenue. Debates are still on whether ad-valorem basis of royalty calculation should be applicable to all major minerals. It is also true that besides royalty, State Govt. seeks to impose collateral Levies and cesses to increase the revenue from the mining of minerals. In this context it would be desirable to have adequate rates of royalty to cover the collateral levies and cess. In fact, the revenue earned through royalty is not spent towards regional development. It is thus suggested that a portion of royalty may be frozen in certain percentage in a separate head and an equal sums can be contributed by the mine owner. This would be a substantial fund which can be utilized for development needs of the locals, tribal and weaker sections in the mining area.

(II) **Steel Authority of India Ltd. (SAIL)**

Royalty can be charged on ad-valorem basis on sale price of seller and cost of production for captive consumer. The rate may be 3-4% of selling price/cost price as the case may be. It would be better to have adequate rates of royalty rather than impose collateral levies and cess which may or may not be legally tenable. It would be desirable that part of royalty be kept in a separate fund for development needs of the local, tribal and weaker sections in mining areas, rather than imposing other levies.

(III) **Indian Steel Alliance**: 

Generation of fund by the mine owner voluntarily is not a good idea. This would amount to indirect compulsion. Single royalty is what is required.

(IV) **Indian Bureau of Mines**: 

Government of Maharasthra has already created a fund of the royalty which may be equivalent to 5% of proceed earned by the State Government every year.

(V) **TISCO**: 

State Governments are not spending any portion of royalty for the development of effected area. 50% of the royalty be earmarked for infrastructure development.

(VI) **ESSAR Steel Limited**: 

Royalty should not be considered as a source of income for the state as industrial development depends on gainful utilization of the mineral resources. Earnings for the state will increase as the mining activities grow.
We agree that all cess/levies must be merged and only one levy including royalty should be imposed on the mining activities. Specific rate is a better option when it is decided on the basis of marketability of the product.

(VII) **Government of Chhattisgarh**

States being the owners of on land minerals, main proceeds from their exploitation must flow to the states, which is not the case at present. Rates of royalty on different minerals presently vary between 2% to 10% of their fair market price which are grossly inadequate. Chhattisgarh Government is of the view that:

royalty on all minerals should be ad-valorem, i.e. a fixed percentage of the current fair market price,

(a) ad-valorem rates, as of now are very low, which should be increased.

(b) Getting royalty from minerals is the constitutional right of the states. This cannot and should not substitute the other areas of taxation available to the states, such as “entry tax”, “tax on land”, “tax on mineral rights”, etc.

(c) Utilization of royalty revenue should be best left to discretion of the states.

Any prescriptions in this regard would be against the federal fabric enshrined in the Constitution.

(VIII) **Government of Orissa**

Section 9(3) should be amended to delegate the responsibility of fixation of rates of royalty to the State Governments as the mineral resources belong to the State and the royalty thereon is one of the primary source of sustenance for the mineral bearing States. The Central Government, while empowered to prescribe and revise the rates of royalty, has to take care of this primary need of the mineral bearing States. There has been serious aberration in discharge of this responsibility by the Central Government. In the recent revision of rates of royalty on non-coal minerals, the same on iron ore was marginally improved (like from Rs. 24.5 to Rs. 27.5). While there was about five fold increase (on an average) in the iron ore price and the mine owners were allowed such wind fall profits without having to share any of it with the owner of the resource, i.e. State Government. There is very poor justification for not increasing the royalty rate on iron ore. These are only a few examples while fixation of royalty on ad valorem basis will minimize some of these problem, but still it is better that this responsibility is left to the concerned State Government. Any apprehension that a State Government in its anxiety to make more revenue gain would increase the royalty rates beyond acceptable limits is totally unfounded, because the same State Government would also be conscious to see there are takers for its minerals and will try not to be arbitrary in discharging this responsibility.

(IX) **Government of Jharkhand**

Minerals are finite and non-replenishable resources. Rates of royalty on different minerals presently vary between 2% to 10% of their fair market price, which are grossly inadequate. It is submitted that:

i) royalty on all minerals should be ad-valorem, i.e. a fixed percentage of the current fair market price,

ii) ad valorem, rates as of now are very low, which should be increased.

iii) Getting royalty from minerals is the Constitutional right of the states. This cannot and should not substitute the other areas of taxation available to states, such as “entry tax”, “tax on land”, “tax on mineral rights”, etc.

iv) Utilization of royalty revenue should be best left to the discretions of the states. Any prescriptions in this regard would be against the federal fabric enshrined in the Constitution.
Shri R.K. Dang,
Chairman,
Expert Committee for formulating
National Guidelines for Iron Ore Mining,
Ministry of Steel,
Room No.120,
Udyog Bhavan,
New Delhi-110 011.

Dear Sir,

Sub: National Guidelines on Iron Ore Mining - Expert Group for

I have gone through the draft Report of the Expert Group which was put up before the meeting of the Expert Group held on 12 instant.

Since the views of the mining industry, which were backed up with data and arguments, were not given due consideration and ignored, I have no alternative but to totally and completely reject in categorical terms the recommendations of the Expert Group as being biased and highly detrimental to the interest of the entire mining industry.

I enclose a copy of my strong Note of Dissent for incorporation in the Report.

I also enclose a copy of the letter I have addressed to the Secretary, Ministry of Steel in this behalf for your information.

Thanking you,

Yours faithfully,

(R.K. SHARMA)
SECRETARY GENERAL

End: As above
RATIONALE FOR PREFERENCES

The Rationale for Preferences is a pious hope without any substance. For example, it says that "production of steel commensurate with our geographical size, population and developmental goals has to be given highest strategic priority." It also speaks of "rich iron ore reserves" of India to "preserve and leverage to the maximum," but the "Rationale" is silent why steel production has not increased and the reasons therefor. It says authoritatively "the present per capita consumption of 31 kg has to increase to at least 80 kgs by 2020 and perhaps 300 kgs by 2050", but has not said a word how despite a number of MoUs signed by the many old and new companies to set up steel plants in Orissa ten years' back, not one has seen the light of the day. Even TATA's Gopalarpur project did not see the light of the day and was shelved.

2. The reason is that the steel demand has not increased to an extent as to require additional capacity. We have no example of an "export-oriented" steel plant in the world. The "Rationale" laments that 50 million tonnes of steel, equivalent to 78 million tonnes iron would have fetched US$ 20-25 billion as against US$ 4 billion tonnes for iron ore. The question is why no steel plant came into operation despite surplus availability of iron ore in non-captive mine. Even Orissa government offered their captive iron ore leases but despite that, no steel plant came into existence. The answer is that no new additional demand for steel was generated. The government has to act as a catalytic agency to generate demand by pump priming and liberalising those sectors such as infrastructure, construction and manufacturing, where the intensity of demand for steel is more. The Expert Group is ambivalent on this score and does not even comment on this.
3. The result is that whereas the production of steel over the years increased slowly and in 2004-05 only marginally increased by 1.67%, the production of iron was propelled by Chinese demand and increased substantially.

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Crude steel production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A) Main producers</td>
<td>17254</td>
<td>17762</td>
<td>18982</td>
<td>20012</td>
<td>20015</td>
</tr>
<tr>
<td></td>
<td>(2.94)</td>
<td>(6.87)</td>
<td>(5.43)</td>
<td>(0.01)</td>
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</tr>
<tr>
<td>(B) Secondary producers</td>
<td>9703</td>
<td>10202</td>
<td>11461</td>
<td>14236</td>
<td>14808</td>
</tr>
<tr>
<td></td>
<td>(5.14)</td>
<td>(12.34)</td>
<td>(24.21)</td>
<td>(4.60)</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>26957</td>
<td>27964</td>
<td>30443</td>
<td>34248</td>
<td>34821</td>
</tr>
<tr>
<td></td>
<td>(3.73)</td>
<td>(8.86)</td>
<td>(12.50)</td>
<td>(1.67)</td>
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<tr>
<td>Iron ore consumption</td>
<td>36020</td>
<td>37713</td>
<td>40936</td>
<td>44975</td>
<td>45493</td>
</tr>
<tr>
<td></td>
<td>(4.70)</td>
<td>(8.54)</td>
<td>(9.86)</td>
<td>(1.15)</td>
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<td>Iron ore exports</td>
<td>37270</td>
<td>41840</td>
<td>48020</td>
<td>62657</td>
<td>79312</td>
</tr>
<tr>
<td></td>
<td>(11.72)</td>
<td>(15.32)</td>
<td>(30.48)</td>
<td>(25.58)</td>
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<tr>
<td>Iron ore production</td>
<td>60762</td>
<td>82266</td>
<td>99072</td>
<td>122838</td>
<td>142711</td>
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<tr>
<td></td>
<td>(6.76)</td>
<td>(14.90)</td>
<td>(23.99)</td>
<td>(16.18)</td>
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<tr>
<td>Surplus iron ore</td>
<td>7472</td>
<td>6968</td>
<td>10116</td>
<td>15206</td>
<td>17906</td>
</tr>
</tbody>
</table>

Source: 1. Joint Plant Committee, Kolkata
2. Indian Bureau of Mines, Nagpur
3. MMTC Ltd., New Delhi and Goa Mineral Ore Exporters' Association, Panjim

Notes: Figures in parenthesis indicate rise in production over previous year.

While arriving consumption level we have assumed a uniform thumb-rule of 1.6 tonne per unit of hot metal.

If units and alloy steel plant use imported scrap for production of steel and therefore they are not included while arriving at the consumption figures of iron ore.

4. Almost the entire increase in the production of iron ore was export driven and came from existing mines which were either closed (such as in Chitradurga-Tumkur region in Karnataka and Reddi area in Maharashtra) or were not operating at their full capacity (such as in Orissa/Jharkhand and Bellary-Hospet in Karnataka). No green field project has been opened in the last more than two decades. The increase in production provided employment in mines which are in backward and tribal areas and in ancillary activities like maintenance, handing, transport, ports, etc.
5. The question arises why despite there being so much latent iron ore production capacity available, no additional steel capacity came into operation for export? The answer is that nowhere in the world, steel industry has developed based on exports. Had it been so, Australia, South Africa and Brazil who export all raw materials needed for steel, would have only exported steel. The fact of the matter is that steel industry develops based on the propensity of domestic demand as has happened in case of USA, Germany, Japan, South Korea and now China. It is because of this reason, the first White Paper on steel issued by the Ministry of Steel in 1976 visualising steel production at 75 million tonnes by the end of the last century (2000) remained only a pious hope. Unless the Govt. of India takes appropriate steps in consultation and cooperation with their government departments in right earnest, the present projection for steel in 2020 or 2050 would remain a distant dream and pious hope.

6. Para 4 of the "Rationale" is still grandeur in verbiage and content. It says that with growing industrialisation production of steel and downstream products are "clearly at a take-off point" forgetting that service sector contributes 52% of India’s GDP, agriculture 21% and balance (27%) comes from others in which manufacturing is only a part. This is clearly borne out by Table-1 above which indicates that crude steel production increased by only 1.67% in 2004-05 over its production in 2003-04. If steel production had increased, the non-captive mines could have provided the ore. The closed and dormant non-captive production had to wait for Chinese steel industry to come to its rescue. I however wish the dream of Expert Group comes true for utilisation of non-captive iron ore production capacity. In fact next portions of the report show the reverse reasoning for giving captive leases to existing and new steel plants.
BASIS FOR PREFERENCES.

7. Para-6: It is very strange that though the Expert Group was constituted with terms of reference for "formulating guidelines pertaining to iron ore, manganese ore and chrome ore regarding giving preferential mining rights to certain persons by the State Government under section 11(5) of MMDR Act, 1957", the Expert Group has, for reasons best known to it, only talked of specific provisions contained in Section 11(3)(e) which refers to "such other matters as may be prescribed". The Expert Group forgot to understand that the phrase "since other matter as may be prescribed" under sub-section (e) of Section 11(3) has to be read with reference to Section 11(3)(a) to (d) of the MMDR Act, 1957. The Expert Group is silent on Section 11(5) of the MMDR Act, 1957 under which it was constituted.

8. This therefore really shows that this Expert Group is working beyond the scope under which it was expected to formulate the guidelines. The subsequent paras of the draft report show it is the steel lobby which succeeded in the formulation of this Committee to twist various clauses of the Act, which only pertains to mines and mineral development, to its own selfish interest. It is sad that the Chairman who is supposed to be impartial, is leaning entirely towards steel lobby and ignoring all the data and figures with full arguments given by me, IBM and NMDC. The Steel lobby which pre-ponders this Expert Group has no substantial arguments and data to counter the arguments given by FIMI.

9. Para-7: The "Scheme of Preferences" under Section 11(3)(e) which has no relevance for the constitution of this Expert Group, which was formulated under Section 11(5), is totally illegal and outside the scope. The "Scheme of Preferences" itself is outside the scope of this Expert Group and therefore not acceptable. The entire draft report is therefore illegal and out-of-focus.
10. **Para-8:** No country can have the growth of a globally competitive steel industry unless it has got globally competitive mining industry. We have not come across anywhere in the world any steel plant, which may be globally competitive, has promoted globally competitive iron ore mining. The very fact that this has been mentioned in para 8 shows the gross ignorance of the Expert Group about the mining industry. It is quite possible that majority of the members of the Expert Group are the steel people or its representatives and since the Chairman has leanings towards the steel industry, they have chosen to ignore the various presentations made by FIMI while formulating “Scheme of Preferences”.

11. **Para - 9-12:** As far as I know, no interaction was made with any mine operators. The Chairman did talk to me in one or two meetings where I made him know the view-points of FIMI. Had the Chairman given serious thought to the view-points expressed by me on behalf of the mining industry, altogether different conclusions would have emerged. What we find in this draft report is a single mind devotion to favour the steel industry in acquiring captive leases without visualising that no additional steel capacity can be established without the additional demand for steel.

12. **Para-13(i) & (ii):** All the integrated steel plants (public sector as well as public limited companies) with the exception of RINL, which is linked to NMDC Bailadila deposit, have captive mines which can not only meet their iron ore requirements of the present level of steel production but even their brown-field expansion for next 30 years. Many of these steel plants are not even utilising the entire production of iron ore and selling in the domestic market and exporting as per the statement given hereunder. It therefore naive to give them additional area.
Table-II
Status of production, captive consumption, domestic sale & export from captive mines during 2003-04

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Company</th>
<th>Name of mine</th>
<th>Production (Qty. in Tonnes)</th>
<th>Captive consumption</th>
<th>Domestic</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SAIL (VISL)</td>
<td>Kemmangundi</td>
<td>140,682</td>
<td>102,814</td>
<td>36,668</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>SAIL</td>
<td>Bolani</td>
<td>3,314,709</td>
<td>3,314,709</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>TISCO</td>
<td>Joda</td>
<td>3,457,284</td>
<td>3,215,323</td>
<td>98,384</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>TISCO</td>
<td>Khondbond</td>
<td>558,452</td>
<td>431,555</td>
<td>126,897</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>IDCOL</td>
<td>Kolho Rolta</td>
<td>433,800</td>
<td>58,964</td>
<td>365,837</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Jindal Steel</td>
<td>Tantra</td>
<td>1,364,578</td>
<td>504,042</td>
<td>-</td>
<td>779,311</td>
</tr>
<tr>
<td>7.</td>
<td>SAIL</td>
<td>Kalta</td>
<td>1,123,000</td>
<td>1,123,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>SAIL</td>
<td>Tensa</td>
<td>1,169,796</td>
<td>1,288,444</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Raipur Alloys</td>
<td>Dongbaror</td>
<td>7,095</td>
<td>7,095</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>SAIL</td>
<td>Rajhara</td>
<td>3,404,058</td>
<td>2,404,058</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11.</td>
<td>SAIL</td>
<td>Dalll</td>
<td>4,764,824</td>
<td>4,764,824</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12.</td>
<td>IISCO</td>
<td>Manoharpur</td>
<td>39,722</td>
<td>39,722</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>13.</td>
<td>IISCO</td>
<td>Sukhi</td>
<td>224,824</td>
<td>214,924</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.</td>
<td>TISCO</td>
<td>Noamundi</td>
<td>4,279,351</td>
<td>2,688,370</td>
<td>993,000</td>
<td>594,660</td>
</tr>
<tr>
<td>15.</td>
<td>SAIL</td>
<td>Mochhataburu</td>
<td>3,555,995</td>
<td>3,555,995</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>16.</td>
<td>IISCO</td>
<td>Dhobi</td>
<td>210,230</td>
<td>210,230</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>17.</td>
<td>SAIL</td>
<td>Kinburu</td>
<td>3,608,902</td>
<td>3,608,902</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18.</td>
<td>IISCO</td>
<td>Gua</td>
<td>1,442,390</td>
<td>826,269</td>
<td>602,104</td>
<td>13,936</td>
</tr>
</tbody>
</table>

Source: Indian Bureau of Mines, Nagpur

13. 55% of the total production of iron ore from Noamundi iron ore mines of TISCO is being sold in the market, most of which is exported. And still they want captive leases for their brown-field expansion! Expert Group should have gone deep into these aspects. I am of the firm view that four big private sector steel plants want to capture all the iron ore resources of this country so that no foreign investment in steel comes to this country.

14. I may further mention that many of the steel plants in public or private sectors are not even utilising their sintering and pelletising capacity to the fullest extent; pelletisation plants of some of the steel plants are not even working and are closed. How can these plants produce in excess of their requirements and sell outside is a moot question, the Expert Group should have gone through:
### Table-III

**Capacity of Pelletisation Plants in India**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Plant</th>
<th>Capacity (000 tonnes)</th>
<th>2002-03 Production</th>
<th>2003-04 Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kudremukh Iron Ore Co. Ltd., Kudremukh, Distt. Mangalore, Karnataka</td>
<td>4000</td>
<td>3450</td>
<td>NA</td>
</tr>
<tr>
<td>2.</td>
<td>Mandovi Pellets Ltd., Shiroda, Goa</td>
<td>1800</td>
<td>150</td>
<td>Nil</td>
</tr>
<tr>
<td>3.</td>
<td>Jindal Vijayanagar Steel Ltd., Distt. Bellary, Karnataka</td>
<td>3000</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>4.</td>
<td>TISCO Noamundi, Jharkhand*</td>
<td>800*</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>5.</td>
<td>Chowgule &amp; Co. Ltd., Pale, Goa*</td>
<td>550*</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>6.</td>
<td>Essar Steel Ltd., Visakhapatnam, A.P.</td>
<td>4000</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

* Plants Non-working

Source: Indian Bureau of Mines, Nagpur

### Table-IV

**Capacity of Sintering Plants in India**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Plant</th>
<th>Capacity (000 tonnes)</th>
<th>2002-03 Production</th>
<th>2003-04 Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bokaro Steel Plant, Jharkhand</td>
<td>6200</td>
<td>5202</td>
<td>5227</td>
</tr>
<tr>
<td>2.</td>
<td>Bhilai Steel Plant, Chhattisgarh</td>
<td>6550</td>
<td>5210</td>
<td>5810.8</td>
</tr>
<tr>
<td>3.</td>
<td>Durgapur Steel Plant, West Bengal</td>
<td>3009</td>
<td>2556</td>
<td>2640</td>
</tr>
<tr>
<td>4.</td>
<td>Rourkela Steel Plant, Orissa</td>
<td>3067</td>
<td>2396</td>
<td>2624</td>
</tr>
<tr>
<td>5.</td>
<td>Visakhapatnam Steel Plant, Andhra Pradesh</td>
<td>5256</td>
<td>NA</td>
<td>5840</td>
</tr>
<tr>
<td>6.</td>
<td>TISCO Steel Plant, Jharkhand</td>
<td>2500</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>7.</td>
<td>Kalinga Steel Plant, Orissa</td>
<td>8.00</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Source: Indian Bureau of Mines, Nagpur
15. (iii): While we have covered the brown field expansion of the existing steel plants in our above comments, we would like to strongly suggest that at present, the non-captive mines are producing about 100 million tonnes in excess of the requirements of the domestic steel industry which is about 45.493 million tonnes in 2004-05. (The total iron ore production in 2004-05 is of the level of 142.71 million tonnes). Why not brown-field or new green-field steel plants be persuaded to purchase and enter into long-term commitments with the existing mineowners with yearly price negotiations as is the practice world-wide.

16. (iv) & (v): We do not find any rationale for limiting the entry of foreign investors in steel industry to one or two with a minimum plant capacity of 10 mtpa. It should be left to the foreign investors to decide the capacity of the plant. However we are in favour of foreign investment in the steel and mining sectors.

17. (vi): This is again a wishful thinking on the part of this Expert Group "to promote at least one major integrated steel plant" in tribal areas. One cannot impose location for the plant on an entrepreneur. Economic and other considerations have more relevance on such a decision than a wishful thinking the Expert Group is indulging in. Infrastructure is also a consideration for such a project.

18. (vii): This is again a wishful thinking of the Expert Group where they have thought of a small steel units coming together as groups or partnerships to be encouraged to get preferential grant of mining leases. I think the Expert Group and its Chairman somehow want to favour steel companies, big or small, to get captive leases on preferential basis.

19. Para-14 (I): The steel industry, large or small, has some strange notion, not backed by facts and reasons, that large number of dispersed mini blast furnaces, direct reduction plants or combination plants are not getting iron ore
and I feel the Expert Group, without adequate reason, has taken it to its heart.

We enclose the data at Annexure-I which will indicate that the entire requirements of iron ore of these mini blast furnaces, direct reduction plants or combination plants, have been met. We again reiterate that the total requirements of iron ore for the entire steel sector, the main and secondary producers, were 45.493 million tonnes in 2004-05. Even after meeting their requirements of 45.493 million tonnes, the country had a surplus production of 97.218 million tonnes, out of which 79.312 million tonnes were exported, leaving even now a surplus of 17.906 million tonnes. The whole effort of the Expert Group seems to be to ignore the data submitted by me and get influenced by the steel lobby. They have been successful to influence the Chairman who leads the deliberations.

20. We also find no justification to allocate minimum proportion of 70% production for the needs of these secondary producers and allowing export of the remaining 30%. Will this Expert Group underwrite the entire production of iron ore produced in non-captive mines? The whole approach of the Expert Group seems to be that the existing mining companies sell their product at depressed prices rather than at an economic price.

21. The Expert Group has not also got any idea nor has it attempted to know that South Western India comprising Karnataka and Goa contributed more than 42% of the total iron ore production. There are very few secondary steel producers in that part of the country. Even in the Central and Eastern India comprising of Chhattisgarh, Jharkhand and Orissa, there is surplus production. I hope instead of coming to the conclusion based on newspaper reports, which are sponsored by the steel industry, the Expert Group and its Chairman should have done some homework. I have provided all the data to substantiate my above arguments but the Chairman and the Expert Group ignored this while drafting the report.
22. (ii): How much the present steel plants are doing beneficiation by sintering or pelletisation can be seen from the tables III and IV mentioned in para 14 above. The present steel plants who have got captive leases find it more profitable to sell the ore in the market than to do in-house beneficiation by way of sintering or pelletisation.

23. (iii): The Expert Group is naive when it expects world class professional mining companies to come to India to mine low grade hematite ores, say below 58% Fe, and reclaim dumps. Iron ore is not a scarce commodity. The Chairman and the Expert Group should understand that there are plenty of iron ore resources available throughout the world. The world iron ore resources have increased from 90.50 billion tonnes in 1969 to 195 billion tonnes in 2005 despite having mined billions of tonnes. In fact, the USGS has estimated the world resources of iron ore to exceed 800 billion tonnes of crude ore containing more and 230 billion tonnes of metal in January 2005. When the iron ore resources are so plentiful, we do not know how any world class professional mining company will come to India to mine below 58% Fe content in such a closed atmosphere which this Expert Group has tried to develop.

24. For the education of the Expert Group, I would like to quote from a research conducted by UNCTAD in June 2005 which says "the total iron ore capacity expansion pipeline contains almost 300 Mt of new projects planned to come on stream until 2007. Of this total, around 137 Mt falls into the "certain" category, 96 into the "probable" and 65 into the "possible". There are also some 65 Mt that were taken into operation in late 2004 and early 2005. In the period 2008-2012 another 250 Mt of capacity are planned". This should give the Chairman and Expert Group a peep into where the world iron ore industry is moving.
IRON ORE - PREFERENTIAL SCHEDULE

25. Preference I: The entire Schedule is a jugglery of fancy ideas. I have commented on many of these in earlier part of this note. I do not agree to give any captive iron ore leases to any existing or new steel plant till the existing surplus capacity in non-captive mines is utilised which will help us in tapering exports over a course of time.

26. My only comments are limited to the proviso where how the Expert Group has limited the use of fines only upto 80% as agglomerate or otherwise in captive leases of steel plants and not 100%. The Expert Group is giving a leverage to the steel plants to whom it has recommended captive mines and allow them to sell the balance 20% fines in the open market. I feel the entire report is of fanciful ideas and far away from the ground realities.

27. Preference II: This is again a fanciful imagination of the Expert Group and its Chairman. Things do not happen like this at the ground level. For the information of the Expert Group, the entire ore produced in non-captive mines is utilised and sold by blending with higher grades of ores: this is what we called zero waste mining on which I have extensively dealt in my various correspondence addressed to the Chairman of the Expert Group which he has chosen to ignore.

NOTES TO SCHEME OF PREFERENCES

28. This is with an idea to confuse the Expert Group by resorting to all sorts of confused jugglery. It does not deserve to comment upon.
29. **Preference 1:** One cannot do "time-bound programme of geological investigations designed to prove entire ore body" for the simple reason that exploration is a very expensive proposition. A mining company would do the exploration work looking 10 years ahead depending upon its market access.

30. The proviso under this head betrays the ignorance of the Expert Group. This also shows how the Expert Group has chosen to ignore the representations I have been making in the Export Group meetings.

**Other recommendations:**

31. **2-A:** While I agree for the dereservation of the chrome ore bearing areas, I am not able to understand that how the OMC can work out time-bound prospecting/mining plan for execution within next 5 years. Unless, there is a demand for chrome ore, there cannot be an expansion of mining operations.

32. **2-(C) & (D):** International market is built up after a lot of expenditure of time and money. Export business of chrome ore had been built upon over decades and the suggestion of the Expert Group to stop export of chrome ore other than concentrates will not only result in loss of face for the country but affect other export-import business as well.

33. **Canalisation of chrome ore through MMTC is to put the wheels of a vehicle in reverse gear.** This Expert Group should be well aware that mica trade was disturbed only after it was canalised through MITCO, a subsidiary of MMTC. The world had in the meantime developed synthetic mica with better physical and chemical properties. I hope this Expert Group does not want to put the chrome ore in a similar perspective although chrome ore is available in a large
number of countries, the largest being in South Africa which can feed the world for another 400 years. The only loser will be India.

OTHER OBSERVATIONS AND RECOMMENDATIONS

34. It is surprising that the preamble to the recommendation is about getting over the procedural bottlenecks, but while recommending, the Expert Group has deviated into other issues not covered by its terms of reference. I give my comments hereunder:

35. 1 - Exports:(i-iii): According to IBM classification, the iron ore resources of up to 62% are considered low grade. What is the basis of recommending ban on export of lumps ore assaying 61% Fe or above and fines above 61% canalised through MMTC which is against WTO regime. Who will buy iron ore less than 61% Fe in the world when higher grade iron ore is available. Even Goan iron ore of 62% will become non-exportable. This ban is recommended despite recommending captive leases for brown-field and green-field steel projects. The Expert Group refuses to take note that there are large number of non-captive mines in public and private sectors which have excess production capacity after meeting the domestic requirements. I have explained this in my note and I have also given a detailed presentation before the Expert Group both verbally and in writing. The Expert Group and its Chairman refuse to see the light of the day.

36. When the iron ore up to 64% was allowed to be freely exported, it was the private sector which developed the export market. The MMTC, through whom iron ore was canalised, could not even utilise the full capacity of ports like Chennai and Visakhapatnam. Ports like Belekeri and Karwar had closed down. Mines in Chitradurga-Tumkur district of Karnataka as well as Reddi areas were closed down. Mines in Bellary-Hospet and Eastern sectors were operating at
sub-optimal level. The exports from Paradeep had declined down to hardly a million tonnes. Haldia, though was developed for iron ore exports, could not export a single tonne. This shows the pathetic background of MMTC and if the Chairman or the Expert Group is thinking of canalising it, it will lead to complete stoppage of iron ore in times to come. Neither the steel plants will come in the absence of steel demand nor the iron ore of the country would be utilised.

37. If exports are stopped or regulated, the consequences will be

- glut in domestic production not required for the domestic iron and steel industry;

- imbalance in regional surpluses such as Karnataka, Goa and Orissa which do not have or have limited domestic outlet;

- closure of mines resulting in unemployment, creating socio-economic unrest; and

- mines once closed will be difficult to restart as there will be water-logging in the already mined-out pits during rainy seasons which may result in the mineral deposits being lost forever.

38. In the past, Government has tried to interfere in the market mechanism of some minerals. Mica was canalised through Mica Trading Corporation (MITO), a subsidiary of MMTC which tried to regulate mica market. However, in the course of time, synthetic mica was developed which has better chemical and physical properties than natural mica. The international mica trade is now limping and its production in India is mostly through illegal channels. Export ceilings were imposed on manganese ore canalised through MMTC. Manganese ore was indispensable item for steel making. However, its usage in steel production has now come down to 4-5 Kgs. per tonne of hot metal as against 40-45 Kgs. about 15 years back. As such, India is not able to fully utilise the export ceilings of manganese ore. Since iron ore is one of the most widely spread mineral in earth crust, if its exports are regulated or restricted, it is for sure that other countries such as Australia and Brazil will take advantage of
this. It may also be that steel may itself be substituted by such metals as
titanium or aluminosilicates. Nano-technologies may replace traditional use of
metals such as steel in times to come. It is therefore not advisable to restrict or
regulate iron ore exports which also provide cushion against fluctuations in
domestic market or vice versa.

39. In order that there is no adverse impact on the domestic iron ore industry
and to utilise its surplus capacity, it is suggested that

- no captive mines should be allocated to upcoming steel plants,
- utilise the surplus production capacity in non-captive mines optimally,
- create conditions in the States of Karnataka and Goa so that new steel
  plants are set up there. At present because of the water scarcity in
  Karnataka, the possibility of new steel plants seems to be less bright.

II - Dormant leases and reversal of recommendations

40. (i-iii): I hope the Expert Group does not know the legal implications of
what it is suggesting. Under Rule 24(A)(6), if an application for the renewal of a
mining lease made within the time referred to in sub-rule (1) is not disposed of
by the State Government before the date of expiry of the lease, the period of the
lease shall be deemed to have been extended by a further period till the State
Government passes order thereon. Most of the mines which are in forest areas
are held up in the State Forest Departments. They have therefore to stop mining
operation. No recommendation has been made in this regard. Even in the
cases where clearance under Forest(Conservation) Act, 1980 has been
received, the State Governments are sitting on the renewal applications. The
mineowners are in dilemma as to what to do because even after having paid the
compensatory afforestation charges and NPV, their leases are still waiting
execution of renewal.
41. **IV - Ministry of Steel: The suggestion of referring all cases of renewal, grant or revision relating to iron ore, manganese ore and chrome ore to the Ministry of Steel goes against the spirit of MMDR Act, 1957. When we are inviting 100% foreign equity in mining of all minerals and metals, to give preference to public sector is a negation of requirements made in the MMDR Act, 1957. This only shows that the Expert Group has not gone deep into the matter and is giving recommendations based on hearsay.**

**CONCLUSION**

42. In peroration, I would like to mention for the benefit of the Expert Group that the Indian resources of iron ore, which have been made compatible with UNFC classification which is more scientific, have grown enormously. The resource position since 1.1.1980 till 1.4. 2000 have been tabulated in the following table:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Resources as on 1.1.1980</th>
<th>Production between 1980-1990</th>
<th>Resource as on 1.4.1990</th>
<th>Diffrence in resources</th>
<th>Production between 1990-2000</th>
<th>Resource as on 1.4.2000 (as per UNFC classification)</th>
<th>Diffrence in resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haematite</td>
<td>11470</td>
<td>11030</td>
<td>+486</td>
<td></td>
<td></td>
<td>(a) Reserves 6025</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Remaining resources Total 5400</td>
<td></td>
<td>(a) Reserves 286</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Remaining resources Total 10396</td>
<td></td>
</tr>
<tr>
<td>Magnetite</td>
<td>5170</td>
<td>4856</td>
<td>-274</td>
<td></td>
<td></td>
<td>Total 10682</td>
<td>+5786</td>
</tr>
<tr>
<td>TOTAL</td>
<td>15640</td>
<td>470</td>
<td>16835</td>
<td>+195</td>
<td></td>
<td>(a) Reserves 6311</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Remaining resources Total 15790</td>
<td></td>
<td>(b) Remaining resources Total 22107</td>
<td></td>
</tr>
</tbody>
</table>

Note: Reassessed as per United Nations Framework Classification (UNFC) which has been adopted in Indian Mineral Sector and does not include 1480 million tonnes of prospective resources which does not find any place in UNFC.

Source: Indian Bureau of Mines, Nagpur
43. The cut-off grade for estimating the haematite resources has been taken as 55% Fe and above. If the cut-off grade is reduced to say 45% Fe, the iron ore resources will increase substantially. With the modern technology it should be possible to utilise iron ore of 45% Fe and above.

44. It would be observed that despite having mined 470 million tonnes of iron ore between 1980 and 1990, the resources of iron ore increased by 195 million tonnes as on 1.4.1990. Similarly, after mining 653 million tonnes between 1990 and 2000, the resources of iron ore increased by 5272 million tonnes as on 1.4.2000. It is therefore quite obvious that as and when the mining activity intensifies, concomitantly there are more exploration activities and the discovery of more resources.

45. The Expert Group should help develop a world class iron ore resource industry where economy of scale will help the steel plants get cheaper iron ore than what they would get if they mine in their captive mines and sell surplus ore to make more profit.
## PRODUCTION OF CRUDE STEEL VS A VIS IRON ORE CONSUMPTION

### Quantity: '000 tonnes

<table>
<thead>
<tr>
<th>Plants</th>
<th>Production 2000-01</th>
<th>Production 2001-02</th>
<th>Production 2002-03</th>
<th>Production 2003-04</th>
<th>Production 2004-05(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel units with captive mines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bhilai Steel Plants</td>
<td>3836</td>
<td>8138</td>
<td>3967</td>
<td>6547</td>
<td>3923</td>
</tr>
<tr>
<td>Durgapur Steel Plant</td>
<td>1593</td>
<td>2548</td>
<td>1688</td>
<td>2689</td>
<td>1708</td>
</tr>
<tr>
<td>Rourkela Steel Plant*</td>
<td>1542</td>
<td>2901</td>
<td>1334</td>
<td>2134</td>
<td>1475</td>
</tr>
<tr>
<td>Bokaro Steel Plant</td>
<td>3635</td>
<td>5816</td>
<td>3498</td>
<td>5597</td>
<td>3670</td>
</tr>
<tr>
<td>Visvesvaraya Iron and Steel</td>
<td>117</td>
<td>167</td>
<td>115</td>
<td>164</td>
<td>106</td>
</tr>
<tr>
<td>Indian Iron and Steel</td>
<td>330</td>
<td>526</td>
<td>346</td>
<td>554</td>
<td>327</td>
</tr>
<tr>
<td>Tata Iron and Steel</td>
<td>2565</td>
<td>5706</td>
<td>3749</td>
<td>5696</td>
<td>4096</td>
</tr>
<tr>
<td>Total - A(I)</td>
<td>19219</td>
<td>38357</td>
<td>14677</td>
<td>23483</td>
<td>15617</td>
</tr>
<tr>
<td>Units dependent on non-captive mines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alloy Steel Plant *</td>
<td>114</td>
<td>95</td>
<td>109</td>
<td>140</td>
<td>141</td>
</tr>
<tr>
<td>Rashtriya Ispat Nigam #</td>
<td>2821</td>
<td>4514</td>
<td>2960</td>
<td>4784</td>
<td>3256</td>
</tr>
<tr>
<td>Total - A(II)</td>
<td>2935</td>
<td>4514</td>
<td>3068</td>
<td>4784</td>
<td>3356</td>
</tr>
<tr>
<td>Sub Total (A)</td>
<td>17762</td>
<td>28267</td>
<td>18982</td>
<td>29812</td>
<td>20319</td>
</tr>
<tr>
<td>B. SECONDARY PRODUCERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAF Units (Including Corex-BOP/MSF-EOP) (dependent on both captive and non-captive) @</td>
<td>5372</td>
<td>8565</td>
<td>5904</td>
<td>9446</td>
<td>6711</td>
</tr>
<tr>
<td>IF Units (use only scrap for production of steel)$</td>
<td>4331</td>
<td>-</td>
<td>4298</td>
<td>-</td>
<td>4750</td>
</tr>
<tr>
<td>Sub Total (B)</td>
<td>9703</td>
<td>16202</td>
<td>9446</td>
<td>11461</td>
<td>10738</td>
</tr>
<tr>
<td>GRAND TOTAL STEEL(A+B)</td>
<td>26957</td>
<td>27964</td>
<td>30443</td>
<td>34248</td>
<td>34821</td>
</tr>
<tr>
<td>Actual consumption of iron ore from captive mines</td>
<td>22911</td>
<td>23483</td>
<td>24883</td>
<td>26349</td>
<td>26251</td>
</tr>
<tr>
<td>Actual consumption of iron ore from non-captive mines</td>
<td>13109</td>
<td>14230</td>
<td>15948</td>
<td>18026</td>
<td>19232</td>
</tr>
<tr>
<td>TOTAL IRON ORE CONSUMPTION</td>
<td>36020</td>
<td>37713</td>
<td>40536</td>
<td>44975</td>
<td>45493</td>
</tr>
</tbody>
</table>

Source: Joint Plant Committee, Kolkata

Notes:
1. While arriving consumption levels we have assumed a uniform (thirty) rule of 1.5 tonnes per unit of hot metal.
2. Uses scrap, sponge iron, hot briquetted iron(HBI) and ferro-alloys for production.
3. NMCC has its particular deposit linked to supply its requirement for iron ore.
4. Most of the large sponge iron units have captive plants, some units like Gesim use imported pellets and only some sponge iron units source iron ore from non-captive sources like NMCC, Jharkhand-Orissa and Bolliary-Hospet sectors.
5. Use imported scrap for production of steel.

Note: p : provisional figures.
Dr. Mano Ranjan,
Secretary to the Govt. of India,
Ministry of Steel,
Udyog Bhawan,
New Delhi.

Dear Sir,

Sub: National Guidelines on Iron Ore Mining - Expert Group for

The Expert Group was constituted “to formulate guidelines pertaining to iron ore, manganese ore and chrome ore regarding giving preferential mining rights to certain persons by the State Government under Section 11(5) of MMDR Act, 1957” which gives the State Government powers to recommend a later applicant for a mining lease in preference to a prior applicant.

2. However, while giving its recommendations in the draft Report, the Expert Group has given its report on criterion to be followed under Section 11(3) which is completely different provision for prioritising applicants received on the same day. However the Expert Group has decided to fall-back upon Section 11(3)(e) which covers “such other matters as may be prescribed”.

3. Apart from the deviation from the original sub-section 5 of Section 11, we feel the Expert Group has twisted its entire recommendations to favour the steel lobby. While giving the draft recommendations, the Expert Group forgot to understand that the words in Section 11(3) (e) “such other matters as may be prescribed” have to be read in line with Section 11(3)(a) to (d) which are as under:

“Section 11(3): The matters referred to in sub-section (2) are the following:

(a) any special knowledge of, or experience in, reconnaissance operations, prospecting operations or mining operations, as the case may be, possessed by the applicant;

(b) the financial resources of the applicant;

(c) the nature and quality of the technical staff employed or to be employed by the applicant;

(d) the investment which the applicant proposes to make in the mines and in the industry based on the minerals.”

4. It is therefore seen that since the Committee was asked to give its recommendations under Section 11(5) of the MMDR Act, 1957 and its recommendations are being given under Section 11(3) of the above Act, the
entire working of the Committee and its recommendations become automatically null and void.

5. We in FIMI have been of the view that the very constitution of the Expert Group was heavily loaded in favour of steel industry. The Chairman though worked as Mines Secretary for 8 months before retiring in August 1991, had the experience of about 5 years in the Ministry of Steel. It is therefore not unnatural that he should be heavily tilted towards the steel industry, being unaware of the mining industry.

6. Since the Expert Group was steel-oriented, it had virtually no knowledge on iron ore mining industry and therefore the conclusions are also based on half knowledge and are beyond reality.

7. Whatever briefing and strong arguments, with full data and charts given by us, were ignored and not given due attention they deserved. In fact our arguments were so strong that none of the members of the Expert Group, including the Chairman, had any answers. Most of the recommendations are to favour the steel industry and are based on gut feelings. Any Expert Group would have first thought to utilise the surplus non-captive capacity available in the iron ore mining in the country. Instead, the Expert Group has suggested to grant fresh captive leases for brown-field and green-field steel projects.

8. The Expert Group has not even realised what will happen if the non-captive mines are closed. These are not the cases of Germany, France and UK where the coal mines were closed and the labour absorbed in other industries. In India there is no such alternate employment. The result will be that there would be illegal mining and the naxalite activities will accelerate.

9. Since the views of the mining industry, which were backed up with data and arguments, were not given due consideration and ignored, I have no alternative but to totally and completely reject in categorical terms the recommendations of the Expert Group as being biased and highly detrimental to the interest of the entire mining industry.

10. I however enclose a copy of draft Report of Expert Group and my strong Note of Dissent for your information.

Thanking you,

Yours faithfully,

(R.K. SHARMA)
SECRETARY GENERAL

Encl: As above
No.15(4)/2005-RM4

Dated the 26th August, 2005

To,

Shri R.K. Sharma,
Federation of Indian Mineral Industries,
Bakshi House,
NEW DELHI.


Sir,

This has reference to your letter dated 16.8.2005 enclosing your Note of Dissent on the draft Report of the Expert Group which was tabled at the third meeting of the Expert Group held on Friday, the 12th of August, 2005. As you would recall, this meeting had to be adjourned due to time constraints of some members. It was decided to continue the meeting on Wednesday, the 17th Aug., 2005 when the Group reconvened and discussed the report further. You have chosen not to attend the postponed session on 17th Aug., 2005. Instead, you have sent the Note of Dissent.

2. At the outset, let me thank you for your active and useful participation in the first two meetings of the Expert Group held on 19.5.2005 and 22.6.2005. Your Dissent Note which was received just in time was, circulated and mentioned in the Group meeting held on 17.8.2005.
3. Adverting to your Dissent Note and its enclosures wherein you have, *inter alia*, suggested a 'tilt' towards the steel industry because of my five years association with the Ministry of Steel, I would recall to your mind my three years in MMTC when I was specifically incharge of iron ore exports and supplies to steel plants by private mine owners and later, four years in Ministry of Commerce where again, exports of iron ore was within my charge.

4. As far as the Scheme of Preferences for grant of iron ore mining leases is concerned, your view from the very inception, was that steel plants should not be allowed any captive mines and should depend on private owners for iron ore. I and other members of the Expert Group are not persuaded to share FIMI’s view. In our view, large integrated steel plants involving massive capital investment do need to have the benefit of strategic raw material security at reasonable prices; if Indian steel is to be globally competitive. It is essential to harness our raw material resources to produce value added manufacturers in the country rather than frittering them away for quick private profits through runaway exports.

5. You have expressed doubts whether the projections for steel production by 2020 would actually be realized. Your doubts may not be without historical basis. I agree that the projections should be tempered with realism and linked to appropriate supporting measures such as assuring supplies of iron ore. Whether the projections are realized 100% or not, only time will tell, but certainly there is a discernible steepening growth trend in steel production in recent years. A per capita steel consumption of 80 kg. is a very modest necessity for the country’s survival as an industrial power of any consequence.
6. You have objected to the sale of fines by captive mines in the open market. Such sale has not been permitted.

7. As regards steel plants linked to FDI, the Group has already deleted mention of 'one or two' plants at the adjourned meeting held on 17th Aug., 2005.

8. As regards the plants in tribal areas, it is not the role of the Expert Group to impose any location. The intention is that, should a suitable entrepreneur wish to put up a plant in tribal areas, he should be accorded preference in grant of lease so that the benefits of development of mineral resources in Scheduled areas are also shared by the tribals who are mostly below the poverty line and are deserving of affirmative action.

9. In your comments on Chrome Ore, it is surprising that you oppose time bound programmes to prove the entire ore body. We believe that it should be incumbent for mine operators who are ultimately deriving personal pecuniary benefit from extraction of a non-renewable resource from the earth, should make their contribution to geological investigations for proving reserves in national interest.

10. Finally, you would recall that a number of problems and difficulties connected with grant and operation of mining leases were brought to the notice of the Group and discussed. In fact, you personally had emphasized the importance and urgency of solving these problems affecting working of mines. Since these problems are not covered by the Terms of Reference of the Group, they have been covered separately in a note titled "Other Observations and Recommendations". This does not form part of the report of the Group.
11. Your various derogatory remarks are fit only for the contempt they deserve. It is possible that they have added to your stature in your constituency of private mine owners.

12. A copy of the final report is being sent to you herewith.

Yours faithfully,

(R.K. DANG)

Encls: As above.