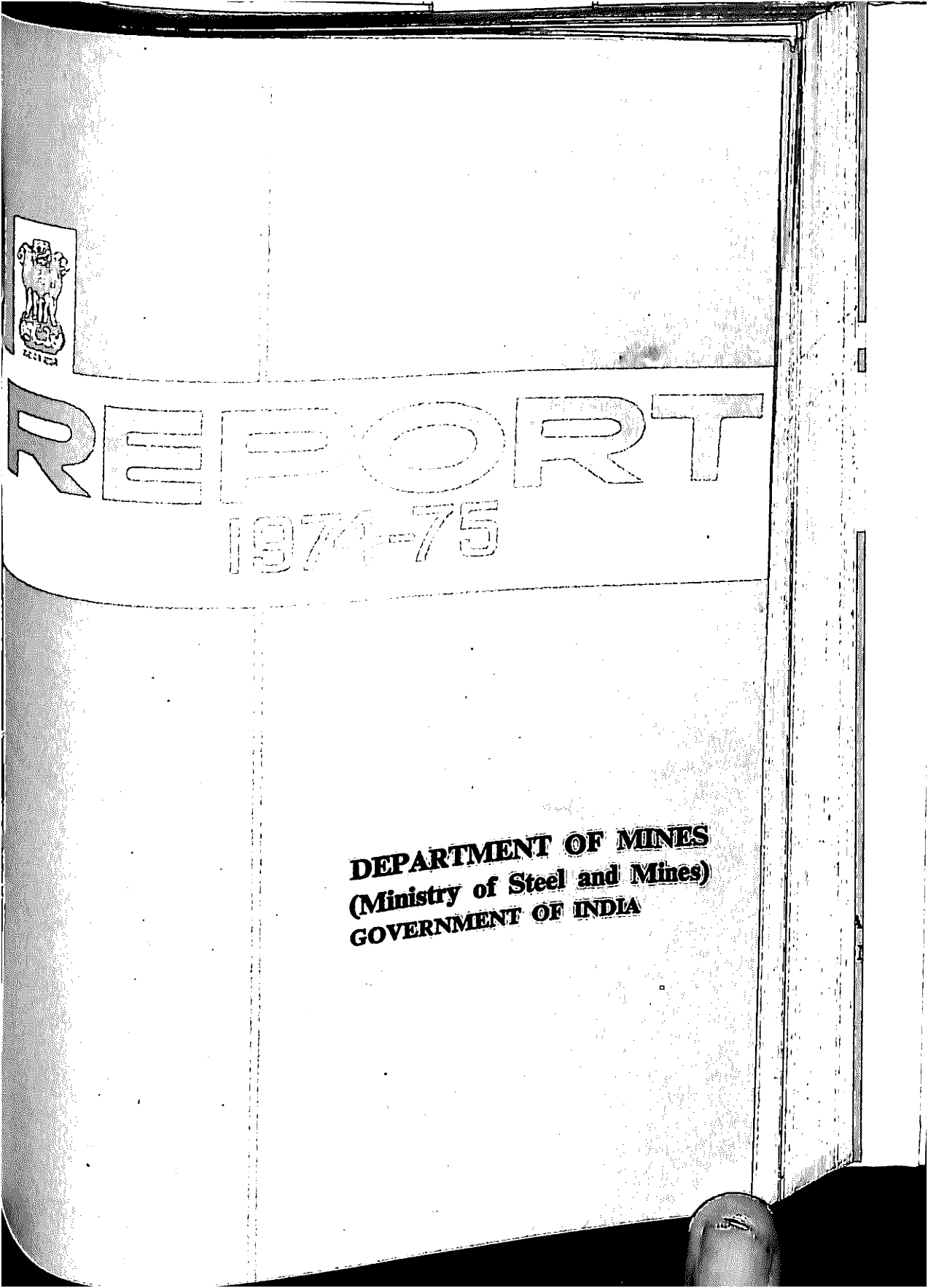

DEPARTMENT OF MINES
(Ministry of Steel and Mines)
GOVERNMENT OF INDIA

ANNUAL REPORT

FOR

1974-75

DEPARTMENT OF MINES

(Ministry of Steel and Mines)

GOVERNMENT OF INDIA

CONTENTS

CHAPTER I

THE YEAR AT A GLANCE

Introduction

1.1. The Department of Mines, in the Ministry of Steel and Mines, is responsible for the surveys and exploration regarding all minerals (other than petroleum and atomic minerals) and the mining and metallurgy of all non-ferrous metals, both in the private and public sectors. The Department is also responsible for general policy in respect of regulation and development of mines and minerals under the Mines and Minerals (Regulation and Development) Act. 1957 and Rules framed thereunder.

1.2. Amongst the various minerals, (a) petroleum and gas have been the responsibility of the Department of Petroleum (in the Ministry of Petroleum and Chemicals) (b) atomic minerals of the Department of Atomic Energy. Within the Ministry of Steel and Mines, the Department of Steel deal with iron ore, manganese ore, limestons, sillimanite, kyanite and other minerals and alloys used in the steel industry (but grant of mining leases for these minerals also is dealt with by the Department of Mines).

1.3. Further, during this year, with effect from 11-10-74, all matters relating to coal and lignite have been transferred from the Department of Mines to the new Department of Coal (under the Ministry of Energy). The list of subjects which are now being handled in the Department of Mines is given at *Appendix I*.

1.4. The Department has, under its administrative control, a number of subordinate offices and public sector undertakings concerned with the survey and exploration of minerals and production of non-ferrous metals. These offices and public sector undertakings are lister at *Appendix II*.

1.5. Minerals constitute one of the most valuable of our national resources. These resources are, however, a "wasting asset" as, once extracted, there is no replenishment by nature.

TABLE 1

(Paragraph 1·7)

MINERAL PRODUCTION IN INDIA 1971 TO 1974

(Important Minerals)

S. No.	Mineral	Unit	1971	1972	1973	1974*
1.	Coal	Million Tonnes	71·82	75·66	77·09	83·27
2.	Petroleum (Crude)	Million Tonnes	7·19	7·37	7·20	7·49
3.	Iron Ore	Million Tonnes	34·31	35·39	35·56	35·01
4.	Limestone	Million Tonnes	25·08	26·05	25·34	24·50
5.	Manganese ore	'000 tonnes	1,841	1,643	1,489	1,423
6.	Bauxite	'000 tonnes	1,517	1,684	1,292	1,045
7.	Dolomite	'000 tonnes	1,320	1,348	1,449	1,146
8.	Gypsum	'000 tonnes	1,088	1,105	886	1,012
9.	Copper ore	'000 tonnes	666	873	1,102	1,397
10.	Chromite	'000 tonnes	273	295	291	376
11.	Magnesite	'000 tonnes	296	251	193	262
12.	Phosphorite	'000 tonnes	232	217	137	440
13.	Steatite	'000 tonnes	179	211	210	247
14.	Kyanite	'000 tonnes	63	68	58	52
15.	Zinc Concentrates	Tonnes	15,855	17,055	23,913	28,763
16.	Mica (Crude)	Tonnes	15,099	14,173	13,830	13,268

Conservation and planned exploitation of minerals is, therefore, of vital importance to the national economy.

Plan Outlays for Mineral Sector

1.6. The Government, therefore, attach the highest importance to the rapid development and production of minerals to provide basic raw material inputs for our industries without having to increase our imports of metals as well as, in certain items, to provide a steady surplus for earning foreign exchange through exports. Planned development of mineral resources calls for the coordination of a large number of successive tasks including basic mapping (topographical and geological), exploration, evaluation, extraction and treatment of ore (processing and/or beneficiation). Having regard to the extent and variety of mineral resources in this vast country, there is great potential for rapid growth in this sector. Accordingly, the Government has progressively increased the outlay for the mineral sector in the successive Five Year Plans. For the Fifth Five Year Plan period, and outlay of Rs. 527 crores has been provided for the items dealt with by the Department of Mines.

Mineral Production

1.7. As a result, the contribution of the mineral sector to the national income has also risen from Rs. 470 crores in the First Plan and Rs. 688 crores in the Second Plan to Rs. 969 crores in the Third Plan, and Rs. 2,485 crores in the Fourth Plan. The progress made in the production of important minerals in the country during the years 1971 to 1974 is summarised in *Table 1*. The total value of minerals produced in India (excluding atomic minerals and common salt) rose from Rs. 506 crores in 1969 to Rs. 753 crores (estimated) in 1974.

Statistics of Production

1.8. A statement showing production of non-ferrous metals and alloys during 1973-74 and 1974-75 is given in *Table 2*.

TABLE 1

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16.	Mica (Crude)	Tonnes	15,099	14,173	13,830	13,268

TABLE 1—contd.

S. No.	Mineral	unit	1971	1972	1973	1974*
17.	Lead Concentrates	Tonnes	4,262	5,005	7,672	10,660
18.	Gold	Kilograms	3,656	3,290	3,278	3,166
19.	Apatite	Tonnes	11,307	11,613	9,980	9,445
20.	Others (Value)	Rs. Million	680	768	775*	745
21.	Total value (Excluding atomic minerals & Common salt.)	Rs. Million	5,057	5,431	5,702*	7,530

*Based on actual data for 11 months (Jan-Nov. '74) and Dec. '74 on prorata basis includes broad estimates for 'minor minerals' since the actual figures for 1974 are not yet available.

(i) Data given above (excluding Coal and Petroleum) are based on the returns received under M.C.D.R., 1958, by the Indian Bureau of Mines and the information available from the different State Governments in respect of 'minor minerals'.

(ii) The source of Coal data is Coal Controller, Calcutta and that for petroleum is the Ministry of Petroleum and Chemicals.

(iii) The value is reckoned in terms of "pit's mouth value."

(iv) The data for the years 1971, 1972 and 1973 are the latest revised figures finalised for the Indian Minerals Year Book 1973 and includes the up-to-date revisions (wherever necessary.).

TABLE 2

METALS PRODUCTION

(Non-ferrous metals and alloys) (Para 1.8)

Unit: onnes

S. No.	Name of Industry	No. of existing units	1973-74 (a) capacity (b) production (actuals)	April-Sept. 1974	Estimates for Oct. 1974-March 1975	Total
1	2	3	4	5	6	7
1.	Aluminium*	4	(a) 210170 (b) 147845	60262	69738	130,000
2.	Antimony	1	(a) 1000 (b) 535	212	228	440
		2 (including Khetri Copper Complex)	(a) 16500 (b) 12740	4447	8553 (including 3600/ Tonnes expected from 2nd unit of HCL Khetri Copper Complex)	13,000
4	Lead	1	(a) 6000 (b) 2700	1941	2059	4,000
5.	Zinc	2	(a) 38000 (b) 23491	13024	14976	28,000
1.	Aluminium Foils*	3	(a) 6000 (b) 5772	2966	2900	5,866

*Lockout since 15-9-73 in the unit of M/S Aluminium Corporation Ltd., Asansol.

TABLE 2—*Contd*

1	2	3	4	5	6	7
2.	*Aluminium Rods and Section Exd, @ including pipes & tubes.*	6	(a) 13500 (b) 11572	5253@	5200	10,453
3.	*Aluminium sheets/circles**	15	(a) 71500 (b) 41365	23570	23000	46,570
4.	*Aluminium Wire Rods for ACSR/AAC Conductors, including Properzi Rods &*	3+(12)	(a) 42500+(46400)=88900 (b) 37629+(40011)=77640	&14585+(11343)=25928	& 14000+(11500)=25500	& 28585+(22843)=51428
5.	*Brass/Copper Pipes & Tubes*	4	(b) 1753·27	857·89	928	1,786
6.	*Brass/Copper Rods, Sections, Bars, etc. (extd.) including Arsenical Copper Rods.*	10	(b) 5559·81	2305	2450	4,755
7.	*Brass/Copper sheets and Circles* ..	18	(b) 16416·87	7375	7620	14,995
8.	*Brass/Copper wire for non-elect. purposes*	3	(b) 2149·54	787·43	800	1,587
9.	*Electrolytic Copper Wire Rods* ..	(3)	(a) (32400) (b) (17791)	(6581)	(6500)	(13,081)
10.	*Lead Pipes/Tubes*	1	(b) 6·31	Nil	Nil	Nil
11.	*Lead Sheets*	4	(b) 1451·81	800	800	1,600
12.	*Zinc Sheets/Strips (highly polished for photoengraving purposes)*	2	(b) 485·96	220·49	235	455
13.	Non-ferrous Alloys such as Antifriction Bearing Metals, Bell Metals, Bronze, Gun Metals, Solders etc, including Aluminium alloys.	14	(b) 29165·29	11120	11064	22,184

@ M/s Indoswe Engineers Pvt Ltd., 5, Bund Gardens Road, Poona-11 and M/s Banco Aluminium Ltd., Padra Road, Baroda, started to give production; the former from January 1974 and the later from April 1974.

& Additional figures in brackets are for the industries borne on the list of Electrical Directorate of D.G.T.D.

CHAPTER II

GEOLOGICAL SURVEY OF INDIA

Structure and Functions of the Department

2.1. The Geological Survey of India is fundamentally an investigational agency having as its main objective, acquisition of geological knowledge with special reference to the geology of India, including minerals, to be utilised for a variety of developmental activities like application, transport, terrain evaluation, environmental control, land use etc.

PERFORMANCE

Geological Mapping

2.2. During the season April—October 1974, an aggregate area of 32,925 sq. km. was covered in different parts of the country by systematic and large scale mapping. Of the total area mentioned above, 2943 sq. km was covered in different parts of the country by systematic and large scale mapping. Of the total area covered, systematic geological mapping on 1 : 50,000 and smaller scales was carried out over an area of 29,982 sq. km.; while 29,982 sq. km was covered on larger scales, mainly for coal and economic minerals.

2.3. Many new Mineral occurrences were located in course of such mapping amongst which mention may be made of the following :

(i) lead deposit in the village Kusumtanr, Palamau District (Bihar).

(ii) barytes zone in Mangampeta area, Cuddapah District (A.P.).

(iii) phosphatic Chert in Piploda block in Amalmal Rassouri sector of Jhabua District (M.P.).

(iv) a zone of asbestoes mineralisation in Kotturu area of Cuddapah District (A.P.)

(v) three fireclay horizons near Karkha village in Auranga Coalfield of Palamau District (Bihar).

Mineral Investigations

2.4. In connection with detailed investigations for minerals and coal, 43,590 metres were drilled during the period.

Coal

2.5. Geological mapping was continued in Pench Kanhan Coalfield (M.P.) Auranga Coalfield (Bihar) and Khasi & Jainti Hills (Meghalaya). Two coal seams of about one metre thick were reported from the Auranga Coalfield. Besides, coal bands were located from South Khichiriat and Rymbai areas of Khasi and Jainti Hill district.

2.6. Investigation by drilling was carried out in seventeen different coalfields—Godavari Valley (A.P.), Jharia, North Karanpura, East & West Bokaro, Hutar, Rajmahal coalfields (Bihar), Singrauli, Sonhat, Lakhanpur, Bisrampur, Sohagpur, Johila, Korba and Pench-Kanhan coalfields (M.P.), Raniganj coalfield (West Bengal), Talchar and Ib-River coalfields (Orissa) and Namchik-Namphuk coalfield (Assam). This involved drilling of 16,178 metres.

2.7. A total reserve of 103.69 million tonnes of coal was estimated during the period under review in the following coalfields :—

Jharia (35.89), Rankanal (24.31), North Karanpura (17.82) East Bakora (1.42), West Bokaro (7.70), Hutar (0.24), Sohagpur (1.01), Singarauli (3.28), Pathakhera (2.33), Ib-River (4.74), Raniganj (4.95).

Copper

2.8. Investigation by drilling was continued in a number of prospects including Garadih-Hitku (Bihar), Taregaon (M.P.), Thanewasna (Maharashtra), Rajotha, Ushri and Banwas Blocks in Khetri Copper Belt as well as Baleshwar, Gol-Badshapur and Parsola areas of Rajasthan. During drilling, intersection was made of two mineralised zones each in Gol-Badshapur, Baleshwar and Thaneswana areas.

Lead-Zinc-Copper

2.9. Investigation by drilling was carried out in Garubathan (West Bengal), Kasarpur & Kuarbarga (Orissa), Khodana, Ashote Bageshwar and Dhanpur (U.P.) and Banera Reserve Forest Block (of Pur-Banera Belt) and Chenpura in Rajasthan.

Bauxite

2.10. Drilling for bauxite was carried out in Dipakujam (Bihar), Simaria, Kauwajhar-Gahri Block and Jalda (M.P.), Mahipalgarh Gargoti Range and Waki Plateau (Maharashtra) Nileshwar (Block-VI), Kanchangad (Block-V) and Talipararuba (Block-I) in Kerala; Galikonda (A.P.), Potangi (Orissa) and Porbandar-Verabal Belt (Gujarat). The probable and possible reserves in Galikonda are estimated at 8.9 million tonnes and 3.1 million tonnes respectively. Reserves estimated so far in Dipakujam are 5.82 million tonnes; in Nileshwar area 6.11 million tonnes; in Kanhangad 0.71 million tonnes, and 4.17 million tonnes in Kauwajhar Gahri Block.

2.11. In Goa, investigation by pitting was completed in Mopa, Pernem and Margim blocks and an indicated reserve of 0.3 million tonnes of bauxite was estimated in Mopa and Pernem Plateau. The possible reserve in Malpem Koragaon and Consua plateau, including Dargalim also, is estimated at about 5 million tonnes.

Iron Ore

2.12. Investigation for haematite iron ore by drilling was continued in ore zone D of Kumaraswamy in Bellary district (Karnataka), Korattimala in Malappuram district (Kerala) and Rowghat in Bastar district (M.P.).

Drilling was started in Jhilling-Langlota in Keonjhar district (Orissa) in August, 1974.

2.13. Also, investigation for magnetite iron ore was carried out by mapping, pitting-trenching and sampling in Valayapatti in Salem district (Tamil Nadu), Biwabathan-Sua Kauria areas in Palamau district (Bihar) and Tuensans district (Nagaland).

2.14. Exploratory drilling for vanadiferous magnetite was completed in Bethjharan area in Mayurbhanj district (Orissa). A total of 0.95 million tonnes of ore has been estimated. In Masanikera area of Shimoga district (Karnataka), drilling was commenced and eight magnetite bands have been encountered in the first bore hole drilled.

Manganese Ore

2.15. Drilling was continued in Satak-Dumgri-Nagardhan sector (in Nagpur district) and Chikla Extension area (Bhandara

district) in Maharashtra and also in Roida-Bhadrasai (Keonjhar district) in Orissa. Of these, drilling was completed in Chikla and Satak areas.

2.16. Other investigations for manganese ore in Nagpur-Bhandara districts revealed manganese ore horizon in Parseoni area. In Kachurwahi Waregaon-Bokhara and Bhanpur areas, manganese ore horizon was found to be of low to medium grade. In Pindikopur-Mirzapur sector of Balaghat district (M.P.) manganese ore horizon of about 1 metre thickness was examined.

2.17. Systematic mapping for manganese ore was also carried out in parts of Adilabad district (A.P.). Preliminary investigation for manganese ore was completed in Shikaripur sector in Shimoga-Chitradurga schist belt (Karnataka) and in Midnapur district (West Bangal).

Chromite

2.18. Investigation for chromite was carried out in the Serpentine belt of Manipur East and Manipur Central Districts; small boulders of chromite were noticed towards north of Namjet Lok near Kwatha. Investigation for extension of chromite resources in Sukhinda-Nausahi belt (Orissa) was also carried out by detailed mapping and geochemical prospecting.

Limestone and Dolomite

2.19. Investigation for limestone by drilling was completed in Gangolihat of Pithoragarh district (U.P.), and in Budawada block of Jaggayyapeta, Krishna district (A.P.). Exploratory drilling was commenced in Haldi, Bijapur district (Karnataka) and was continued in Khasimara-Bholaganj belt, Khasi district (Meghalaya) and in Ankireddipalle, Kurnool district (A.P.). Investigation for Limestone/dolomite was also carried out in Rupa area, Kameng district (Arunachal Pradesh) in Jhalda area of Purulia district (West Bengal) and in area south-east of Palghat (Kerala).

Diamond

2.20. Investigations for diamond by geological mapping, drilling, pitting and treatment of bulk samples were carried out in Panna Diamond belt (M.P.), in Wajrakerur and Lattavaram areas (A.P.) and Jungel area in Mirzapur district U.P.). Reconnaissance mapping and pitting were also carired out to locate the

source rock of the alluvial diamond in the Mahanadi valley Raigarh district (M.P.).

Gold

2.21. The investigation for gold and silver in Kolar Gold Field (Karnataka) was continued by large scale mapping and drilling 561.65 metres were drilled in three boreholes. In the Godag gold field area, investigation by large scale mapping and drilling has been taken up to find out the potentialities of gold in west and middle reefs.

Platinum

2.22. In Singhbhum district (Bihar) sampling for platinum and platinum group of minerals has been undertaken in the ultrabasic rocks.

Graphite

2.23. Investigations for graphite by drilling was continued in Manakadi area, Idikki district (Kerala) and in Implipara block, Banswara district (Rajasthan). In Palamau district (Bihar) investigation by mapping, pitting and trenching was carried out at Tungari and Barkheta belt, in the course of reconnaissance mapping, a rich graphite belt was located near Baresanr.

Rock Phosphate

2.24. Investigations for rock phosphate by pitting and drilling were carried out in Jhabua district M.P.). A number of phosphatic limestones and chert bands have been delineated in Piploda, Khatamba and Kelkua blocks. Preliminary assessment indicates possible reserves of 4.6 million tonnes. In Udaipur district (Rajasthan), drilling was continued in Kanpur and Dakan Kotra areas; in Dakan Kotra area, persistence of phosphorite zone upto a depth of 100 metres below the surface was proved trenching was being carried out to test the continuity between western and eastern parts; in the course of geological traverses, small lenticular patches of phosphorite zones were located in Ajbera and Devera areas. In Beldia area, Purulia district (West Bengal), preliminary investigation has indicated patches of phosphatic rocks.

Potash

2.25. The available geological, geophysical and drilling data of the G.S.I., O.N.G.C. and C.G.W.B. have indicated that Nagaur, Bikaner and Pugal areas constitute the more favourable target areas for search for potash. Test drilling is being continued near a "gravity low" near Jhajhu in the Churu district.

Barytes

2.26. A large deposit of volcanogenic sedimentary type of barytes was identified in the Mangampeta area of Cuddapah district (A.P.) Investigations by large scale mapping, pitting and drilling were carried out. Tentative reserves of about 12 million tonnes of Barytes are estimated.

Magnesite

2.27. Regional assessment for magnesite in Almora and Pithoragarh districts (U.P.), has brought to lihgt a number of sizeable deposits. Investigation by drilling and largescale mapping has indicated reserves of about 53 million tonnes in Kanda-Masauli area and 31.5 million tonnes in Thal-Dewalthal area. In Moyar-Bhavani valley in Coimbatore (Tamil Nadu), a number of magnesite veins in ultramafic bodies have been located by systematic mapping.

Mica

2.28. Structural and mineralogical studies were carried out of the mica pegmatite in Hazaribagh district (Bihar) and underground mapping was done of Palamani and Vindayaka mica mines of Vutakuru area in Nellore district (A.P.).

Fluorite

2.29. Investigation for fluorite by large-scale mapping was carried out in Laddakh district (J & K) and a number of fluorite bands have been encountered. Search for fluorite also continued in Dungarpur district (Rajasthan) and fluorite veins have been encountered in Ramgarh and Gora-Kumbario areas.

Salt

2.30. Investigation by drilling for salt bed was carried out in Didwana Lake area, Nagaur district (Rajasthan).

Other Minerals

2.31. G.S.I. has also carried out geological investigations for gypsum in Coimbatore district (Tamil Nadu) for asbestos in Rajasthan and Katturu area, Cuddapah district (A.P.); for fire-clay in Rajhara area in Palamau district (Bihar), for clays in Japla area. Palamau district (Bihar); for calc-tufa in Ropar district (Punjab); for ochre in Midnapur district (west Bengal); and for Kankar and alkaline earth in Bhatinda district (Punjab).

Geotechnical Investigations

2.32. The Engineering Geology Wing of the G.S.I. undertook over 700 geotechnical investigations for projects relating to irrigation and power development, flood control and control of landslides etc.

Geophysical Investigations

2.33. 29 geophysical investigations were continued during the period and 24 new investigations were taken up. These include 31 investigations for minerals, six in connection with geotechnical investigations, four on Quaternary geological studies; two for preparation of geotechnical maps of Hyderabad and New Delhi; one each in Puga and Chumthang Geothermal field, Ladakh district (J&K), at thermal area of Sohna, Gurgaon district (Haryana), at Manikaran hot spring area, Kulu district (H.P.), one for profilling on selected glaciers in the Sutlej basin in Kinnaur district (H.P.), one for site selection for proposed Atothic Power Plant, at Balana in Amrali district (Gujarat); investigations carried out by Borehole Geophysics Unit in Kolar area (Karnataka), Chinnur area of Godavari Valley coalfield and Raniganj-Jharia coalfields and three items under International Geodynamics Project. In addition, work on seven research projects was continued in the Central Headquarters Laboratory.

Laboratories Petrology

2.34. Twenty research items (including four new items) connected with petrography, ore microscopy, clay minerology coal petrology astrogeology and mineral physics were pursued.

Palaeontology

2.35. During the period under review, work was continued on 19 field-cum-laboratory research projects, maintenance of fossil

galleries of the Indian Museum and preparation of Lexion of the various units of Indian Gondwanas. Assistance was also given to the planning and development of National Geological Parks to be established in the country.

Geochronology and Isotope Geology

2.36. Field work was carried out in and around Turaniddih in Bihar and around Banpur, Khallikota, Rambha and Balugaon in Puri District, (Orisa). Samples were collected for petrographical, geochemical and geochronological studies. Petrographic study was made of samples from Puga Valley, Ladakh district (J&K) and Khallikota, Puri district (Orissa) and preparation was made of whole rock powder samples from Khetri Copper belt, Puga valley and Karnataka. Apatite samples from Singhbhum region and biotite samples from Bihar mica belt were processed and studies for fission track dating undertaken.

Chemical Laboratory

2.37. 12,583 samples involving 68,815 constituents, were analysed.

Offshore Mineral Exploration & Marine Geology

2.38. This Division participated in the various cruises of Oceanovex-I Expedition in the Arabian Sea on board INS Darshak and collected a number of samples. In the Laboratory, these samples were being studied in detail for heavy minerals, clay minerals and benthonic foraminifera. A preliminary joint report on the above cruises in the Arabian Sea, including the results of various aspects of study of the above sediment samples, was prepared and forwarded to the Naval Hydrographic Office.

Glaciological Studies

2.39. This newly-opened Division of Glaciology took up glaciological studies in Gara Glacier in Sutlej Basin and Gangotri Glacier in Ganga Basin.

Map Production

2.40. Eighty-five quardrangle maps on scale 1"-4 miles (1 : 253440) were compiled and are being finalised for printing. Under the project of compilation and publication of Statewise Geological and Mineral maps (of scale 1 : 2.25 million), eleven

maps have already been published. During this period, six resources-maps, compiled on 1 : 5 million scale, have been printed depicting distribution of different metallic ores and other useful mineral substances.

2.41 A pilot study was carried out for location of "Kankar" deposits in desert areas by interpretation of aerial photographs, with field checks, in Bikaner district of Rajasthan, at the request of the Central Road Research Institute. This study is being continued in parts of Uttar Pradesh also. Photogeological interpretation of selected areas, with particular reference to the fracture systems and dyke swarms, continued in respect of Western Ghats, Cuddapah Basin margin, Bundelkhand, Singhbhum, Panna and Wajra Karur areas.

Training Scheme

2.42. Inservice Training in Photo-Geology was conducted by Eastern Regional Office in September, 1974 and by Central Regional Office from 16th August—5th October, 1974. Fourteen officers from different Circles/Divisions of Eastern Regional Office (GSI), and two officers of the Department of Geology and Mining, Government of Orissa, underwent training in Eastern Region and six officers from the Circle/Divisions of Central Regional Office (GSI) underwent training in Central Regional Office.

Publications

2.43 The undermentioned publications were brought out by the Publication Division, G.S.I., during the period April to October (1974).

Title

(1) GSI-News, Vol. 5, No. 3.
(2) Indian Minerals, Vol. 27, No. 1.
(3) GSI-News, Vol. 5, No. 1.
(4) GSI-News, Vol. 5, No. 4.
(5) Misc. Pub. No. 30, Pt. 6 (Tamilnadu & Pondicherry).
(6) GSI-News, Vol. 4, No. 12.
(7) GSI-News, Vol. 5, No. 5.
(8) GSI-News, Vol. 5, No. 6.

(9) Indian Minerals, Vol. 27, No. 3.

(10) Indian Minerals, Vol. 27, No. 4.

(11) GSI-News, Vol. 5, No. 7.

Airborne Mineral Surveys and Exploration

2.44 The Airborne Mineral Surveys & Exploration Office was set up in 1967 to execute Airborne Geophysical Survey Project (Operation Hardrock) in collaboration with M/s. Parsons Corporation, Los Angeles, U.S.A., for intensification of search and exploration of non-ferrous metals. Subsequently, another airborne geophysical survey under the BRGM/CGG Project was conducted during 1971-72 under French collaboration. In September, 1970, this Office was merged with the Geological Survey of India as its Airborne Mineral Surveys and Exploration Wing.

Performance

2.45 The Wing continued field operations in parts of Rajasthan, Gujarat, Bihar-West Bengal, Andhra Pradesh, Karnataka, Madhya Pradesh and Maharashtra.

Operation Hardrock Project

2.46 The evaluation of area-anomalies falling under Phases II and III of the project was continued. 188 aero-anomaly intercepts were covered by reconnaissance and 2 targets were investigated by detailed integrated surveys. During the period under review, 4,590 metres of diamond drilling was done as a follow-up programme on aero-anomalies investigated by detailed integrated surveys (in Rajasthan, Bihar and Andhra Pradesh) thus bringing the total drilling accomplished since the commencement of operations to 44,175 metres.

BRGM/CGG/Project

2.47 1,515 aero-anomaly intercepts were examined by reconnaissance and 1 project by detailed integrated surveys in Karnataka, Maharashtra, Madhya Pradesh, Rajasthan and Gujarat. During the period under review, 358 metres of test drilling was done in Southern Karnataka, bringing the total since the commencement of operations to 1278 metres.

Photo-Geology and data correlation cell

2.48 In the qualitative interpretation of aeromagnetic data, progress was maintained and its correlation with air-photo-interpretation for geological and structural evaluation of the areas covered, regarding Bihar-West Bengal, Andhra Pradesh, Rajasthan and parts of Karnataka. Plotting of magnetic trends, and their correlation with photo-image and regional geology for Operation Hardrock Project, was completed.

Chemical Labortory

2.49 During the period under review, analyses of 9,601 samples were carried out involving 41,329 estimations for copper, lead, zinc, nickel, cobalt, silver, cadmium, vanadium and chromium by atomic absorption spectrophtometry. 91 samples received from Kolar Gold Field were analysed for copper, lead, zinc, nickel, cobalt, vanadium and chromium.

CHAPTER III

INDIAN BUREAU OF MINES

Technical Consultancy Service

3.1 The Technical Consultancy Cell received a total number of 10 consultancy assignments during April to November, 1974. Of these, 4 assignments related to mining and geological work and the remaining 6 were ore-dressing assignments. Some of the assignments received during 1973-74 were also continued/completed during the period. These included three mining and geological assignments and five ore-dressing assignments which were completed and two mining and geological assignments which are under progress.

Publications

3.2 "A Handbook of Indigenously Manufactured Machinery for use in Mines" was completed and released. A "Handbook of Foreign Machinery for use in Mines" was under preparation. Publication of a "Study of Blast Hole Design" is being taken up.

Inspection of Mines

3.3 The Bureau has been carrying out detailed studies, regional studies, mining geological studies and inspection of mines for enforcement of the Mineral Conservation and Development Rules, 1958. The 1974 quantum of work is summarised below :—

Item	Progress during April-November, 1974	Expected progress by 31-3-1975
(1) Detailed Studies	24	44
(2) Regional Studies	7	19
(3) Mining Geological Studies	13	14
(4) Mines Inspection for enforcement of MCDR	489	816
(5) Special investigations	32	32
(6) Essentiality Certificate cases processed	25	25

Research in Special Mining Problems

3.4 (i) The Bureau in carrying out petrological, petrographic and minerographic studies of mica pegmatites and associated host rocks in selected mica mines, with a view to deciphering the various "controls" of mica mineralisation.

(ii) Study on the use of blast hole drilling to replace diamond core drilling, for speedy exploration of iron ore deposits, was continued during 1974-75.

Research on Beneficiation of Low-Grade Ore and Analysis of Ores and Minerals

Item	Progress 1974-75 (April-Nov. 1974)	Progress expected by 31-3-75
1. Ore Dressing investigations	27 (plus 7 in progress)	35
2. Rapid tests on manganese ores	—	10
3. Chemical analysis determination of radicals	6,331	10,000
4. Mineralogical examinations	572	750

Collection and Publication of Statistics

3.5. Indian Mineral Year Books, 1969 and 1970 were released and the 1971 issue is under print. The typescript of Indian Mineral Yearbook, 1972, has been finalised and will be sent to the Press shortly. The other publications released are : The Mineral Statistics and Information; Mineral Statistics of India (April, 1974), and Digest of Minor Mineral Laws of India.

Mineral Inventory

3.6 Preparation of inventory for diamond and quartzite was continued. Updating as on 1-1-73 of the mineral inventories on soapstone and nickel was completed and those of limestone, dolomite, bentonite, fullers earth, graphite, gypsum and chromite are in advanced stage.

Assisting the Mineral Trade in Marketing

3.7 In all, 122 enquiries were attended to from private firms, including four foreign organisations, seeking information on the availability, grades, specifications, utilisation etc, of various minerals. Market surveys for steatite, bentonite and chromite are under progress.

Advising Central and State Governments

3.8 The Bureau furnished comments/notes on 112 technical subjects and also furnished information in reply to 68 enquiries from State Governments. Besides, 69 special compilations were prepared for Central and State agencies. Detailed comments on 5 legislative proposals were also given. The Bureau continued to be associated with various Technical Committees/Working Groups.

General

3.9 (a) Administration of M.C.D. Rules, 1958 : In all 22.126 monthly returns and 2,029 annual returns and 2,693 notices were received and processed/scrutinised.

(b) Ten officers of the Bureau have undergone training in various courses viz :—Computer Management, Executive Development Programme, Foundational Training Courses (for Class I Technical Officers) etc.

(c) Three new Sub-Regional Offices have been opened at Udaipur, Jabalpur and Nellore during the year for checking the proper development of mines.

CHAPTER IV

ADMINISTRATION OF THE MINING LAW

4.1 The Mines and Minerals (Regulation and Development) Act, 1957, and the Rules framed thereunder are administered by this Department. Although the authority for the grant of mineral concessions is the concerned State Government, prior approval of the Central Government is necessary in the cases of certain important minerals (mentioned in the First Schedule to the Act). During the year under report, 153 fresh proposals for grant of mineral concessions in respect of such minerals were referred by various State Governments to the Central Government for prior approval; 100 such proposals were disposed of during the year.

Modification of Mining Leases

4.2 All mining leases for minerals other than coal, granted prior to 13-9-72, are to be modified and brought in conformity with the provisions of the Mines and Minerals (Regulation and Development) Act, 1957, and the rules made thereunder. At the beginning of the year, 383 such cases were pending for modification, with the Controller of Mining Leases (out of which 273 pertained to Goa, Daman and Diu).

4.3 In addition, there are 7,163 cases of mining leases, granted subsequent to 25-10-49, which are also to be scrutinised and brought into conformity with the new provisions of the Mines and Minerals Regulation and Development) Amendment Act, 1972.

4.4 During the year, amendments were made in respect of rules 13, 25, 29 and 37 of the Mineral Concession Rules, 1960 and clause 3 of part VI, Clause 17 of Part VII of Form K. Schedule 1 to the Rules.

MINERAL ADVISORY BOARD

4.5 The 19th Meeting of the Mineral Advisory Board and the Conference of State Ministers of Mining and Geology were held in July, 1974.

REVISION APPLICATIONS

4.6. During the Calendar year 1974, 894 fresh revision applications were received under rule 54 of Mineral Concession Rules, 1960, against orders of State Governments (or against "deemed rejections" on account of State Governments not passing orders within the time-limit specified in the Rules). 595 applications were disposed of during the year.

CHAPTER V

MINERAL EXPLORATION CORPORATION LIMITED

5.1 The Mineral Exploration Corporation was set up in October 1972 to undertake detailed mineral exploration. The authorised share capital of the Corporation is Rs. 25.00 crores.

5.2 The Corporation undertakes contractual drilling work on behalf of Undertakings in the public and private sectors for which payments are made by the concerned parties. It also undertakes such promotional projects as Government may direct, for which payments are made to the Corporation by the Government.

5.3 Apart from continuing the projects taken up during 1973-74, a number of new projects were also undertaken. The main emphasis has been on expediting the proving of coal reserves. The Company has also secured two mine construction contracts. The outlay for 1974-75 is Rs. 3.95 crores.

5.4 The targets fixed for 1974-75 and the likely achievements are:—

	Targets (in metres)	Performance likely to be achieved (in metres)
1. Drilling	99,100	81,000
2. Shaft sinking/incline	970	670
3. Level development/editing	1,435	716
4. Sampling Shafts (pits)	460	410

The main reason for the shortfalls is delay in receipt of equipment.

Coal Exploration

5.5 A total of 43789 m. of drilling and 127m. of mine construction was completed in 17 coal exploration projects and one mine construction project for SCCL, CMA, BCCL and TISCO. During this period exploration was completed in Sarangapalle-

Tekmetla block in the Godavari Valley coal fields for SCCL, Ronai-Mangalpur block in Raniganj coal field and Ghughus block of Vardha Valley coal fields for CMA. Exploration for coking coal at deeper levels was continued in 4 blocks of Jharia coal field for BCCL, in Jamadoba and Sijua collieries for TISCO and for non coking coal in 10 blocks in Raniganj, South Karanpura, Daltonganj, Pench-Kanhan and Vardha Valley coal fields for CMA. Highlights of the coal exploration are as under :—

(a) Completion of exploration in Sarangapalle-Tekmetla block in Godavari Valley coal fields for SCCL has brought to light around 200 million tonnes of additional coal reserves.

(b) Proving of about 60 million tonnes of additional coal reserves in southern part of block A and eastern part of blocks B&F in the Pench-Kanhan coal fields of CMAL. Preparation of detailed exploration reports is under progress both for Singareni and Pench-Kanhan Projects.

(c) Completion of exploration for Ronahi-Mangalpur block in Raniganj coal field for CMA where about 7 million tonnes of quarriable coal have been blocked out.

(d) Blocking out of additional 61 million tonnes of coking coal in Jharia coal fields.

(e) Starting of high priority integrated investigation in Jhanjara block (Raniganj coal field).

Non Coal Projects

5.6 A total of 24037 m. of exploratory drilling and 1294 m. of exploratory mining/mine construction was achieved in projects other than those for coal. Detailed exploration of Ambamata polymetallic deposit was completed and report submitted to the M/s Gujarat Mineral Development Corpn.—Government of Gujarat ..... undertaking. Detailed report on exploration for copper ore carried out at Malanjkhand in the first phase (for HCL) was submitted. Work was continued in Malanjkhand for site confirmation studies for mill, tailing pond etc. and for obtaining some additional ore zone intersections in the upper level of the deposit. Exploration of copper ore was also completed in Dholamala deposit of Khetri belt and core drilling was carried out in Kolihan and Madhan-Kudhan deposits (Khetri belt). Exploration for copper at Turamdih deposit was continued by

underground mine development and plan of production-oriented exploratory mining, totalling about 1620 m., was drawn up in consultation with HCL. In Mailaram copper deposit first level development was completed (with 461 m. of level development) and second level development was started as a contractual job for APMC (Govt. of Andhra Pradesh undertaking) Bauxite exploration was continued in Mahadevia deposit in Jamnagar district, Gujarat and Chintapalle deposit in Vishakapatnam district, Andhra Pradesh. Lead-zinc polymetallic mineralisation was under exploration in B & C blocks of Rajpura-Dariba, Paduna sector of Zawar belt, Shishkhani in Almora district, U.P. and Zangamarajupalle in Cuddapah district, Andhra Pradesh.

5.7 The highlight of base metal investigations was preparation and submission of detailed exploration report on the work carried out in Malanjkhand on behalf of HCL. The deposit as explored by MEC has a strike length of 1800 metres with 65 metres of average true width. The lowest intersection of the lode so far obtained in the bore holes is 225 metres below the ground level, and the deposit does not show any indication of bottoming. The deposit, on the whole, is suitable for large scale open cast mechanised mining upto a depth of 175 m. from the ground level.

5.8 In the non metallic group, apart from carrying out exploration for graphite in Banswara district (Rajasthan), exploration for fluorite was completed in the extension of Mandoki-pal deposit as a contractual job for Rajasthan Industrial Minerals Development Corporation (A Govt. of Rajasthan undertaking) Exploration for limestone at Walayar in Palaghat district (Kerala) was started as a contractual job for Govt. of Kerala. Exploration for sapphire in Paddar deposit (high altitude area in Jammu and Kashmir) was continued this year in collaboration with J & K Government and J & K Mineral Development Corporation but due to restricted working season, the work could be done only for a period of about 3 months. Processing of data is in progress.

CHAPTER VI

ALUMINIUM

Background

6.1 Aluminium is the only non-ferrous metal for the production of which adequate ore reserves, (of bauxite) are available in India. Because of its versatile qualities, aluminium is a good substitute for copper, for which the country is at present depending mainly on imports; ore reserves for copper are unlikely to be as good as for aluminium.

6.2 At the time of Independence, we had aluminium smelting capacity of only 7000 tonnes per annum, wherein two small smelters at Always (Kerala) and at Asansol (West Bengal). As compared to that, the installed capacity has now risen to 246,170 tonnes per annum. Aluminium production reached 181,485 tonnes in 1971-72. On account of power cuts that had to be imposed by different Electricity Boards by the end of 1972-73, however, production during 1973-74 fell to 147,845 tonnes. As the power cuts have continued without relief, production during 1974-75 may not exceed 130,000 tonnes. The production level can rapidly increase as soon as adequate power supply is restored to the aluminium smelters in the concerned States (U.P., Orissa, Karnataka and Tamil Nadu).

6.3 With a view to meeting the growing demand for aluminium meanwhile, additional capacity to the extent of 184,000 tonnes per annum (including 125,000 tonnes in the public sector) has been planned to be set up during the remaining period of the Fifth Plan. Self-sufficiency in aluminium can be achieved if sufficient power is made available on assured basis. The capacities of existing plants, and the schemes in view for expansion of capacity are indicated below :—

Name of the unit	Location	Existing installed capacity	Additional new shemes approved or under implementation	Total
1	2	3	4	5
		Tonnes	Tonnes	Tonnes
(A) *Private Sector*				
(a) Indian Aluminium Co.	1. Hirakud (Orissa)	20,320	—	20,320
	2. Alwaye (Kerala)	15,850	—	15,850
	3. Belgaum (Mysore)	50,000	10,000	60,000
(b) Hindustan Aluminium Corporation	Renukoot (Uttar Pradesh	95,000	25,000	1,20,000
(c) Madras Aluminium Co.	Mettur (Tamil Nadu)	20,000	5,000	25,000
(d) The Aluminium Corporation of India	1. Asansol (W. Bengal)	9,000	—	9,000
	2. Koraput (Orissa)	—	30,000	30,000
(B) *Public Sector :*				
Bharat Aluminium Company :				
(i) Korba (Madhya Pradesh)—under construction		25,000	75,000	1,00,000
(ii) Ratnagiri (Maharashtra)—proposed		—	50,000	50,000
		235,170	195,000	430,170

(Under lock-out at present).

Brief details of the different schemes in the public and private sectors are given below :—

Public Sector

Korba (MP) Aluminium Project :

6.4 The Korba Aluminium Complex is based on the bauxite deposits in the Amarkantak and Phutkapahar areas in Madhya Pradesh and electric power from the Korba Thermal Station. It has been designed to produce 100,000 tonnes per annum of aluminium metal, including about 60,000 tonnes per annum of aluminium "semis" (rolled and extruded products and wire rods).

The alumina plant has been set up with Hungarian technical collaboration while the smelter and fabrication facilities are being established with the technical assistance of the USSR.

6.5 The first stream of the alumina plant, corresponding to 50% of its rated capacity, has been commissioned in April, 1973, the second stream is also ready but its commissioning has been rescheduled so as to correspond to the stage-wise commissioning of the smelter. During 1974, an agreement was concluded for export of 50,000 tonnes of alumina to the USSR; this contract will result in a foreign exchange earning of about Rs. 3.6 crores. About 2,500 tonnes of alumina has also been exported to Thailand and Indonesia, and about 6,000 tonnes of alumina/alumina hydrate has been sold within the country (upto 31-10-74).

6.6 Good progress has been maintained on the construction of the Korba Smelter. The first pot-line of the smelter, with a capacity of 25,000 tonnes, is expected to be commissioned in April 1975; the time-table for commissioning of the remaining three pot-lines (of 25,000 tonnes capacity each) depends upon the availability of additional power from the M.P. Electricity Board.

Ratnagiri (Maharashtra) Aluminium Project :

6.7 The Ratnagiri Project is intended to have a capacity to produce 50,000 tonnes of aluminium metal per annum, (including 25,000 tonnes of conductor grade wire rods), the project will have captive alumina and bauxite Mining facilities. It is based on the bauxite deposits located at Udgiri and Dhangarwadi in Kolhapur District of Maharashtra and on hydel power from the neighbouring Koyna Hydel Station. Government have approved the Ratnagiri Project but, owing to present financial constraints, have not found it possible as yet to allocate the funds that would have to be steadily assured over the construction period (of 5/6 years) once the construction is taken up.

Export-Oriented Alumina Plant in Madhya Pradesh

6.8 In pursuance of the Protocol of Indo-Soviet Commission on Economic, Scientific and Technical Co-operation signed in February 1973, the Bharat Aluminium Company Limited entered into an agreement on 24-10-73 with M/s Tsvetmetpromexport of Moscow for the preparation of feasibility report for the setting up of an export-oriented alumina plant, based on the

bauxite deposits of Balaghat, Sarguja and Mandla Districts in Madhya Pradesh. The feasibility report is expected to be received by the middle of 1975.

PRIVATE SECTOR

Madras Aluminium Company

6.9 The Company has a licence for expansion of its existing smelter at Mettur (Tamil Nadu) from 10,000 tonnes to 25,000 tonnes per annum and, with the approval of Government, has made necessary foreign exchange financing and capital goods import arrangements for the expansion. The installed smelter capacity has reached upto 20,000 tonnes, and can be increased to 25,000 tonnes in 1975-76 if additional power is assured.

India Aluminium Company

6.10 The Company commissioned its new smelter at Belgaum (Karnataka) in October, 1969, and expanded its capacity from 30,000 to 40,000 tonnes per annum in 1972. An industrial licence was given to it in August, 1972 for further expansion of the smelter, from 40,000 to 60,000 tonnes. The installations upto 50,000 tonnes capacity have been completed and full expansion (upto 60,000 tonnes) will be completed by the coming year. However, the utilised capacity is not likely to exceed 40,000 tonnes, till additional power can be assured by the Karnataka State Electricity Board.

Hindustan Aluminium Corporation

6.11 The Company holds a licence for expansion of its Renukoot smelter (U.P.) from 60,000 tonnes to 120,000 tonnes per annum. It has already increased its smelter capacity to 95,000 tonnes per annum but, due to non-availability of power, cannot work the smelter beyond 80,000 tonnes. The final expansion of the smelter (upto 120,000 tonnes) has not been completed due to this continuing power shortage and other difficulties.

The Aluminium Corporation of India

6.12 Its existing old smelter at Asansol (W. Bengal) (capacity 9,000 tonnes per annum) has been under lock-out since September, 1973. An investigation has been done under the Industries (D&R) Act and the report is under consideration of Government.

6.13 The Company was given a licence in February, 1971, for establishment of a new 30,000 tonnes capacity integrated aluminium project in Orissa. The Companys application for import of capital goods for the first stage, (15,000 tonnes per annum) was also cleared by the Government, but the Company has not made any progress in this project.

Aluminium price control

6.14 The Department of Mines issued the Aluminium (Control), Order, 1970, under the Essential Commodities Act effective from 20-3-70. Prior to that, there was an lnformal price agreement with the primary producers of aluminium, according to which a part of the then prevailing excise duty was being absorbed by the producers. In the 1970-71 budget proposals, the excise duty on aluminium was increased; thereafter a notification was issued on 20-3-70, under the Aluminum (Control) Order, 1970, which stabilised the prices at the pre-1970-71 budget level. A Working Group on Aluminium, was set up in April, 1970 under the Chairman, Bureau of Industrial Costs & Prices, to examine the price structure of the aluminium industry. It submitted its report towards the end of 1970; based on that report, the prices of aluminium and its products (excluding foils and extrusions) were uniformly fixed by Government on 24-5-71. Subsequently, on the recommendation of the B.I.C.P., the controlled prices of aluminium were revised upwards on 23-5-74. The ex-factory prices of aluminimum and its products have been increased by Rs. 404/- per tonne with effect from 11-3-1975 taking into consideration the increase in power rates proposed to be made by some State Electricity Boards.

Control on distribution of aluminium

6.15 The heavy power cuts imposed on the aluminium smelters by the different State Electricity Boards have resulted in a substantial drop in production and affected the availability of metal (both electrical and commercial grades) to the consuming units. In view of the scarcity that developed regarding supply of aluminium and which will continue till these power cuts can be restored; a statutory control over distribution of aluminium has been introduced with effect from 9-10-74.

CHAPTER VII

COPPER

7.1 As indigenous production of copper, compared to demand, has been meagre till now substantial quantities of copper metal has had to be imported every year. During 1973-74, for example, indigenous production of copper metal was 12,899 tonnes and 53,000 tonnes of copper metal had to be imported.

7.2 India does not have many rich deposits of copper ore. However, in order to minimise dependence on imports, we have to develop whatever deposits that have been located so far. Therefore, Hindustan Copper Ltd., a public sector undertaking was incorporated on 9-11-67, with the specific responsibility of developing the various copper deposits in the country. The Indian Copper Complex in Singhbhum (Bihar) was taken over from the private sector by Government in September, 1972 and it was also entrusted to H.C.L.

7.3 The authorised share capital of HCL is now Rs. 75 crores. Its projects now are the Indian Copper Complex (Ghatsila) and Rakha Copper Project in Bihar, the Khetri Copper Complex in Rajasthan, the smaller copper mines at Dariba and Chandmari in Rajasthan and Agnigundala Copper/Lead mine in Andhra Pradesh. In addition, HCL is planning the development of the newly-discovered copper deposit at Malanjkhand in Balaghat district (M.P.). The progress of various projects/schemes under the Company is summarised below :—

Indian Copper Complex, Ghatsila (Bihar)

7.4 Till November, 1974, this was the only unit producing copper metal in the country. Since its take-over by the Government and entrustment to HCL, towards the end of 1972, a number of steps have been taken to increase production from the mine and the Smelter. The present smelting capacity at the project is 26,000 tonnes per annum (16,500 tonnes in the New Flash Smelter and 9,500 tonnes in the old Reverberatory smelter). Since the take-over, production of copper metal has increased from 8,405 tonnes in 1971-72 to 12,899 tonnes in 1973-74. The production during 1974-75 is expected to be about 13,000 tonnes.

Steps are being taken to further increase the capacity of the mine and the concentrator to feed the Indian Copper Complex Smelter at Ghatsila.

7.5 It is also proposed to increase the production from the Surda Mine and a detailed Project Report is under preparation. A new 2,000 tonnes per day Concentrator Plant was commissioned at Mosabani in March, 1974. Selenium and sulphuric acid are also being produced as by-products at this Project.

Rakha Copper Project, Bihar

7.6 This Project is envisaged in two phases. Rakha Phase-I includes the development of a mine and concentrator of 1,000 tonnes of copper ore per day. The estimated cost of this Project is Rs. 8.85 crores. The concentrates produced at Rakha will be smelted at the I.C.C. Smelter at Ghatsila. The Concentrator is expected to be commissioned by the middle of 1975. As regards Phase-II, a Canadian firm of Mining Consultants was appointed for drawing up a feasibility report; the report has been received and is currently under examination.

Khetri Copper Complex, Rajasthan

7.7 Khetri Copper Project is the major new project of HCL. In addition to the development of mines and Concentrator, Smelter, Refinery and Acid-cum-Fertilizer Plant are being set up under this Project. The capacity of the Smelter Plant is 31,000 tonnes of electrolytic copper metal per annum. In addition to copper metal, about 1,94,000 tonnes of Triple-Super-Phosphate fertilizer per annum will be produced as by-product.

7.8 The Concentrator Plant at Khetri was commissioned in July 1973. The Smelter has also now been commisioned in November, 1974 and the Refinery in December, 1974. The Complex was formally inauguarated by the Prime Minister on the 5th February, 1975. The Sulphuric Acid Plant is ready for commissioning. The Fertilizer Plant is expected to go into operation by the middle of 1975.

7.9 The Khetri and Kolihan Mines are now producing about 2,000 tonnes of ore per day; as against the average rate of production of 1,000 tonnes of ore per day during 1973-74. Target of ore production during 1974-75 is 6 lakh tonnes. The target of copper metal production during 1974-75 is 3,600 tonnes.

Dariba Copper Project, Rajasthan

7.10 The Dariba Copper Project in Rajasthan has been designed for the production of 100 tonnes of copper ore per day at an estimated cost of Rs. 1.18 crores. The Concentrator was commissioned in September, 1973 and is already working to its rated capacity.

Chandmari Copper Project, Rajasthan

7.11 The Copper deposit at Chandmari in Rajasthan is being developed for the production of 500 tones of copper ore per day at an estimate cost of Rs. 3.03 crores. The ore would be concertrated and smelted at Khetri. Preparatory work for the development of the project is in hand. The work of overburden removal was started in January, 1974 and the production is likely to be commenced in 1976.

Agnigundala Lead-Copper Project, Andhra Pradesh

7.12 (a) *Bandalamottu Lead Project.*

At Bandalamottu, based on the results of exploratory mining HCL took up a Project for the production of 100 tonnes of lead ore per day. A concentrator plant of the same capacity has been installed. Trial runs of the concentrator plant have commenced and regular production is expected by early 1975-76.

(b) *Nallakonda Copper Deposit*

Exploratory mining programme is currently in progress. The investment decision on the project will be taken after the results of the current exploration work are evaluated.

Malanjkhand Copper Deposit

7.13 Promising copper deposits have been discovered by G.S.I. at Malanjkhand in Balaghat District (Madhya Pradesh). The deposits are amenable to open cash mining. Steps have been taken by HCL for the preparation of a Detailed Project Report for exploitation of these deposits; as a part of this, a Consultancy Agreement has been signed with the concerned Soviet agency for the preparation of a Detailed Mine Project Report. This Report has been received by HCL and is being examined by the Company.

7.14 Summarised information regarding capacity, estimated cost and the present stage of the various projects of the Company, as mentioned above, is given in the form of a table on the next page.

Projects	Capacity	Estimated cost (in crores of rupees)	Expected date of commencing	Remarks
1 Indian Copper Complex.	Smelting capacity 26,000 tonnes of metal per annum.	—	—	Project is in production stage.
2 Khetri Copper Complex	1. 31,000 tonnes of Electrolytic copper metal/year 2. 1,94,000 tonnes of TSP/year	115	Smelter Plant commissioned in Nov. 1974. TSP plant will be commissioned by 1st quarter of 1975-76.	—
3 Rekha Phase—I	1,000 tonnes of ore per day	8·85	June, 1975 (commissioning of concentrator plant)	—
4 Rekha Phase—II	—	—	—	Feasibility Report has been received and is under examination.
5 Malanjkhand	—	—	—	Mine D.P.R. has been received by HCL
6 Dariba	100 tonnes of ore per day	1·18	Commenced in Sept., 1973.	
7 Chandmari	500 tonnes of ore per day	3·03	September 1976.	

CHAPTER VIII

ZINC AND LEAD

8.1. Zinc and Lead are the other important base metals apart from copper, required by a number of industries.

8.2. Present annual capacity (licensed) for zinc and lead production is 38,000 tonnes and 5,400 tonnes respectively. There are two zinc smelters—(a) of the Hindustan Zinc Ltd. at Udaipur (Rajasthan) and (b) of Cominco Binani Zinc at Alwaye in Kerala. The only lead smelter at Tundoo (Bihar) is operated by the Hindustan Zinc Ltd. While the production of zinc and lead by Hindustan Zinc Ltd. is based on indigenous ore, production of Cominco Binani is based on imported zinc concentrates. Another unit engaged in mining copper-lead-zinc deposits is the Sikkim Mining Corporation, Rangpo (Sikkim), copper concentrate from it are processed in the respective smelters of Hindustan Copper Ltd.

Hindustan Zinc Limited

8.3. This public sector company is working the lead-zinc ore deposits in the Zawar area of Rajasthan, rock phosphate mine at Jhamarkotra (Udaipur district), zinc smelter and ancillary plants at Debari (near Udaipur) and the lead smelter at Tundoo (Bihar) which has also facilities for recovery of silver. Production achieved by the Company during 1973-74, and estimates for 1974-75, are as follows :—

(In tonnes)

	Production	
	1973-74	1974-75 (Estimates)
	(2)	(3)
Zinc (ROM)	456,340	620,000
Zinc concentrate	25,075	32,000
Lead concentrate	8,347	10,000

(1)	(2)	(3)
Zinc Smelter		
Zinc cathodes/ingots	11,393 (cathodes)	15,000 (cathodes) 13,000 (ingots)
Cadmium	27	40
Single Superphosphate	27,300	47,000
Zinc sulphate	160	160
Lead Smelter		
Pig lead	2,700	4,200
Silver (In Kgs.)	4,182	5,600

Current operation

8.4. Production during the year 1974-75 so far has generally been satisfactory, inspite of interruptions in power supply to the mines and the zinc smelter. The company has commissioned a new melting furnace and the entire production of zinc is now in the form of ingots.

Schemes under implementation

Smelters

8.5. *Debari Zinc Smelter*—Work is in progress on expansion of the capacity of Debari Zinc Smelter from 18,000 to 45,000 tonnes per annum, with corresponding increase in the capacity of by- products. Transfer of basic engineering by Krebs-Pennaroya, Paris and Lurgi of West Germany has been completed and detailed engineering work has made significant progress. The Hindustan Zinc Ltd. has taken steps to finalise details of equipment required, place orders and initiate procurement action. The expansion is expected to be completed during 1976-77.

8.6. *Vizag Zinc Smelter*.—Work is in progress on construction of a new 30,000 tonnes per annum zinc smelter, based on imported zinc concentrates at Visakhapatnam (Andhra Pradesh). It will also have a lead plant of 10,000 tonnes per annum capacity. Basic engineering for all sections of the plant has been transferred by Centrozap of Poland and Lurgi of West Germany to the Engineers India Limited (the Indian Consultants) and the Hindustan Zinc Limited. Detailed engineering is in progress and considerable work has been done at site. The smelter is scheduled for commissioning by the end of 1976-77.

8.7. *Tundoo Lead Smelter modernisation*.—A feasibility/project report has been prepared by Hindustan Zinc Ltd. for the second phase modernisation of the old Tundoo lead smelter so as to stabilise annual lead production at 6,000 tonnes; it will be taken up for implementation after completing the detailed engineering of the Vizag lead plant.

B. *Mines*

8.8. *Balaria Mines*—For meeting the major part of the zinc concentrate requirements of the Debari zinc smelter (on its expansion), H.Z.L. is opening up a new mine at Balaria (Zawar area) for production of 2,000 tonnes of ore per day, with supporting beneficiation facilities. The Mine has been connected by an underground tunnel with the other working mine (Central Mochia). Orders have been placed for all the principal equipment. The Balaria Mine is expected to reach the targetted ore production in 1977-78.

8.9. *Maton Rock phosphate mines*.—For production of super phosphate., H.Z.L. has opened up a captive rock phosphate mine at Maton (Udaipur district). The facilities for beneficiation of the Maton rock phosphate are under construction.

8.10. *Rajpura-Dariba Mines*.—H.Z.L. has taken up development of lead-zinc ore deposits at Rajpura-Dariba in Rajasthan. This mine is expected to sustain daily ore production of 3,000 tonnes, with matching beneficiation facilities. A portable ore dressing pilot plant has been set up and commissioned at Rajpura-Dariba so as enable detailed study of the characteristics of the ore. Tenders received for the shaft sinking work are under scrutiny.

8.11. *Baroi-Zawarmala*—A conceptual engineering — cum feasibility report prepared for development of the lead-zinc deposits at Baroi-Zawarmala (Zawar area), so as to produce 3,000 tonnes of ore per day with corresponding beneficiation facilities, is presently under examination in the concerned Ministries/Departments.

8.12. *Sargipalli*.—HZL has been entrusted with the initial development of the lead ore deposits at Sargipalli (Orissa). A feasibility report for this project is under preparation by H.Z.L.

Cominco Binani Zinc Limited

8.13. Production of zic metal in the Alawye smelter of M/s. Cominco Binani Zinc Ltd. during 1974-75 is expected to be about 9,000 tonnes as against the production of 9,954 tonnes during 1973-74. Proposals are still awaited from the company for implementation of the 'letter of intent' issued to them for expansion of the capacity of the zinc smelter from 20,000 to 40,000 tonnes per annum.

Sikkim Mining Corporation

8.14. Production figures of copper, lead and zinc concentrates by the Sikkim Mining Corporation, a joint venture of the Governments of Sikkim and India, during the year 1973-74 and estimates for 1974-75 are indicated below :—

	1973-74 (Actual)	1974-75 (estimates)
	(in tonnes)	
Copper concentrate	738	600
Zinc concentrate	341	300
Lead concentrate	280	300

CHAPTER IX

GOLD

Bharat Gold Mines Limited

9.1. The Bharat Gold Mines Limited, a public sector company, was incorporated on 1-4-72 and took over the former departmentally worked Kolar Gold Mining Undertakings. The quantity of Ore milled, gold and silver extracted and average extraction grade of ore milled during 1973-74 and 1974-75 (upto November) as compared with 1972-73, are given below :—

	1972-73	1973-74	1974-75 (upto November)
Ore milled (tonnes)	3,85,052	3,41,523	2,06,615
Gold extracted (gms.)	20,00,349	18,01,877	11,36,532
Grade gms./tonnes	5·20	5·28	5·50
Silver extrated (gms.)	1,42,567	1,34,299	84,600

9.2. The total investiment by Government, as on 31-1-72, stood at Rs. 9.78 crores. The authorised capital of BGML has been fixed at Rs. 15 crores. Equity shares of the face value of Rs. 90.99 lakhs have so far been issued by BGML.

9.3. The Company is required to make over the entire gold production to Government at the IMF rate, which is very much lower than the market price. In view of this and the high cost of production, Government had agreed to pay, by way of assistance, a subsidy of Rs. 4.25 crores and Rs. 4.00 crores respectively for the first two years of the incorporation of the company (1972-73 and 1973-74). Based on the financial results of the working of the company during these two years, it was decided that, from 1974-75 onwards, the BGML will be granted subsidy by Government upto the extent of the difference between the price at which Government buys the gold from the

Company and the international market price of gold. The estimated subsidy, on the above basis, for 1974-75, is likely to be about Rs. 572 lakhs.

9.4. A provision of Rs. 3.10 crores was made in the Fourth Plan and BGML took over 24 schemes, including a few spill-over items of the Third Plan, to locate new ore bodies and the development of the existing mines. The actual expenditure from 1969-70 to 1973-74 was Rs. 2.81 crores.

9.5. A total provision of Rs. 2.77 crores has been made during the Fifth Plan for development schemes, which include both the continuing and the new schemes. Keeping in view the allocation of the funds, the following priorities have been taken into account :—

(1) Locating new sources of ore in order to improve the ore reserves and extend the life of the Mines;

(2) Increasing the output;

(3) Reduction in production and operating costs.

9.6. The workshops of BGML manufactured and supplied various items of equipment to other public sector undertakings, in addition to meeting its own requirements. One Electric Locomotive, for use in underground mines, has been designed and developed in the Central Electrical Workshop.

9.7. With a view to achieving better economic performance, BGML has taken up various schemes for modernisation, expansion and diversification. For locating new sources of ore, exploration is being carried out both in and around K.G.F. and in some outside areas such as Ramagiri (A.P.). Exploration has also been taken up of the multi-metal deposits at Mamandur (Tamil-Nadu).

CHAPTER X

NICKEL

10.1. On the basis of a feasibility report prepared by M/s. Chemical & Metallurgical Design Company Private Limited, Government of India have approved the setting up a Nickel extraction Plant in Sukinda area (Orissa). The project envisages development of a Nickel Ore mine near Kansa for an annual output of 5,00,000 tonnes of Nickel Ore (on dry basis) and production therefrom of 4,800 tonnes of Nickel and 200 tonnes of Cobalt metals and 17,000 tonnes of fertilizer grade Ammonium Sulphate.

10.2. The ore is of complex nature and, therefore, pilot plant tests are necessary to confirm the various process parameters and provide data for designing and construction of the main process plant. The pilot plant has been erected in the National Metallurgical Laboratory premises at Jamshedpur and tests are expected to commence shortly.

10.3. Meanwhile necessary investigations, comprising detail contour survey over about 700 hectares around Kansa and Madhapur villages and exploratory drilling for assessing the availability of ground water, have been completed to decide the most suitable site for location of the plant and ownship. A site near Kansa village has been selected. An observatory has been set up near Kansa to record meteorological data.

10.4. The work of preparation of Detailed Project Report for Mining has been taken up. This has been entrusted to the National Industrial Development Corporation Ltd. (NIDC), the public sector agency, who are collaborating with the Nittetsu Mining Consultants Company (Japan) for this work.

CHAPTER XI

ORGANISATION OF THE DEPARTMENT

11.1. Following the approval by the Government of the Scheme to reorganize and strengthen the Department of Mines, so as to ensure speedy implementation of the development schemes, the Technical Cell in the Department has been integrated in the main Secretariat and the technical officers have been given secretariat status to deal with diverse technical and administrative matters.

11.2. With the constitution of a separate Department of Coal under the Ministry of Energy, 24 gazetted posts (including that of Secretary) and 77 non-gazetted posts, were transferred to that Department. The Department of Mines, as at present constituted, is headed by a senior Joint Secretary, who is assisted by two other Joint Secretaries, three Directors, five Deputy Secretaries, one Technical Officer and five Under Secretaries. The total number of gazetted posts in the Secretariat (after the transfer of Coal Division) is 40 and that of non-gazetted staff 148.

11.3. During the year, the Internal Work Study Unit carried out apart from its usual work a system study relating to decentralisation of administration in the Geological Survey of India, vertically and laterally, by delegation of administrative and financial powers.

Propagation of Hindi

11.4. A comprehensive programme is being followed for the progressive use of Hindi for various official purposes. Continuous efforts are being made for imparting training to the members of the staff in Hindi, Hindi Typewriting and Hindi Stenography and for translating laws, rules, notifications, orders etc. During the year under review, about 470 employees of this Department and its subordinate offices have been deputed for training under the Hindi Teaching Scheme.

APPENDIX I

DEPARTMENT OF MINES

LIST OF SUBJECTS DEALT WITH IN THE DEPARTMENT OF MINES (MINISTRY OF STEEL AND MINES)

1. Regulation of mines and minerals development under the Mines and Minerals (Regulation and Development) Act, 1957, and other Union laws including questions concerning various States and incidental business in respect of these.
2. All other metals and minerals not specifically allotted to any other Department, such as aluminium, zinc copper, gold, diamonds, lead and nickel.
3. Planning, development and control of, and assistance to, all industries dealt with by the Department.
4. Geological Survey of India.
5. Indian Bureau of Mines.
6. All other attached or subordinate offices or other organisations concerned with any of the subjects specified in this list.
7. The Sikkim Mining Corporation Limited.
8. Public Sector enterprises and undertakings falling under the subjects included in this list except such as are specifically allotted to any other Department.

APPENDIX II

LIST OF SUBORDINATE OFFICES AND PUBLIC SECTOR UNDERTAKINGS OF THE DEPARTMENT OF MINES

Subordinate Offices

1. Geological Survey of India (including Airborne Mineral Surveys and Exploration)
2. Indian Bureau of Mines.
3. Controller of Mining Leases.

Public Sector Undertakings

1. Hindustan Zinc Limited.
2. Bharat Aluminium Company Limited.
3. Hindustan Copper Limited.
4. Bharat Gold Mines Limited.
5. Mineral Exploration Corporation.
6. Sikkim Mining Corporation.

904 Steel&Min/74—2,000—8-4-75—GIPF

GOVERNMENT OF INDIA
(Bharat Sarkar)
MINISTRY OF STEEL AND MINES
(Ispat aur Khan Mantralaya)
DEPARTMENT OF STEEL
(ISPAT VIBHAG)
NEW DELHI

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904 Steel&Min/74—2,000—8-4-75—GIPF

REPORT

GOVERNMENT OF INDIA
(Bharat Sarkar)
MINISTRY OF STEEL AND MINES
(Ispat aur Khan Mantralaya)
DEPARTMENT OF STEEL
(ISPAT VIBHAG)
NEW DELHI

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REPORT
1974-75

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DEPARTMENT OF STEEL
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NEW DELHI

CORRIGENDA

to the Annual Report 1974-75 of the Ministry of Steel and Mines (Department of Steel)

Page	Line/Other particulars	For	Read
35	3 (from bottom)	Project	Projects
56	5 (from bottom)	Kiribura	Kiriburu
84	19	Box-strapping	Box-strappings
85	3 (excluding heading)	essentialy	essentially
97	In the last Column heading of the table given	.. till end of the November 1974	.. till the end of November 1974
109	5 (from bottom)	344	340
111	Column heading of last but one column of the Appendix	Other	Others
126	Last figures against 'Other Remnants' and 'Sub Total' thereunder	1(appearing both against 'Other Remnants' and 'Sub Total')	.01 (both against 'Other Remnants' and 'Sub Total')

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1975

CONTENTS

THE YEAR AT A GLANCE

The Office of the Iron and Steel Controller, Calcutta, and the Steel Authority of India Limited (incorporated on 24th January, 1973) with its following subsidiaries function under the administrative control of this Department :—

(i) Hindustan Steel Limited ;

(ii) Bokaro Steel Limited ;

(iii) Salem Steel Limited ;

(iv) Hindustan Steelworks Construction Limited ;

(v) National Mineral Development Corporation Limited ;

(vi) Metallurgical & Engineering Consultants (India) Limited ;

(vii) SAIL International Limited ; and

(viii) Bharat Refractories Limited.

The work relating to Bharat Coking Coal Limited, one of the subsidiaries of SAIL, has been transferred to the Ministry of Energy (Department of Coal) and necessary formalities for the transfer of assets and liabilities are being completed.

Besides, the Department also deals with matters relating to the following undertakings in which share holdings of the Government of India have been transferred to the Steel Authority of India Limited :—

(i) Mysore Iron and Steel Limited;

(ii) Bolani Ores (India) Limited;

(iii) Manganese Ore (India) Limited; and

(iv) Metal Scrap Trade Corporation Limited.

Important data relating to the undertakings are given in the following table :—

Name of the Company	Year of incorporation	Capital expenditure upto 31-3-74 (Rs. in lakhs)	Equity capital as on 31-3-74 (Rs. in lakhs)	Govt. loans as on 31-3-74 (Rs. in lakhs)	Cumulative net profit/ loss as on 31-3-74 (Rs. in lakhs)	Cumulative depreciation as on 31-3-74 (Rs. in lakhs)	Cumulative interest on Govt. loans as on 31-3-74 (Rs. in lakhs)	No. of employees as on 31-3-74
1. Steel Authority of India Ltd.	1973	16	131748*	11860@	—	2	10	204
2. Hindustan Steel Ltd.	1954	130476	62358	37350	(—)24616	68274	28256	1,35,128
3. Bokaro Steel Ltd.,	1964	89341	60000	30346	(—) 1589	2033	—	30,156
4. National Mineral Development Corporation	1958	10012	8204	1683	(—) 1225	2160	868	6,181
5. Hindustan Steelworks Construction Limited	1964	1183	50	243	(+) 566	277	47	4,025
6. Metallurgical & Engg. Consultants (India) Ltd.	1973	63	0.05	Nil	(+) 45	8	Nil	1,953
7. Bharat Coking Coal Ltd.	1972	550	200	173	(—) 1361	480	62	1,53,947
8. Salem Steel Ltd.	1972	475	376	Nil	Nil	Nil	Nil	107
9. Metal Scrap Trade Corporation	1964	0.98	20	Nil	(+) 7	0.46	Nil	15
10. Bolani Ores Ltd.	1957	447	100	Nil	(—) 18	230	Nil	1,105
11. Manganese Ore (India) Limited	1962	247	144	Nil	(—) 32	113	Nil	13,546

*Includes Rs. 131220 lakhs invested in the Companies from S. Nos. 2 to 10 in the above statement.

@Utilised for grant of loans to Bokaro Steel Limited (Rs. 11000 lakhs), National Mineral Development Corporation (Rs. 700 lakhs), Bharat Coking Coal Limited (Rs. 80 lakhs), and Hindustan Steelworks Construction Limited (Rs. 80 lakhs).

Some of the more important developments during the year 1974-75 are given below :—

Progress on Bokaro Steel Plant

The first blast furnace complex commissioned on the 3rd October, 1972, continued to function well. During 1973-74, production was 80% of the annual rated capacity of the furnace and in December, 1974, it touched 91.5%. The cumulative total production of hot metal till the end of December, 1974 was 1,610,349 tonnes.

The first 100 tonne converter was commissioned on the 31st January, 1974, and the second on the 4th April, 1974. Up to the end of December, 1974, a total quantity of 90,140 tonnes of ingot steel was produced. The slabbing mill was commissioned on the 30th December, 1974.

According to a review of the construction schedule recently undertaken by Bokaro Steel Limited, all the units of the 1.7 million tonne stage and the intermediate stage of 2.5 million ingot tonnes capacity, excluding the cold rolling mill, are expected to be commissioned by December, 1975; and the cold rolling mill will be completed one year later. The second stage of 4 million ingot tonnes is expected to be completed by December, 1977, and the five stand cold rolling mill complex of expansion stage by 1979.

Progress of production from the integrated steel plants

The production of ingot steel from the integrated steel plants at Bhilai, Durgapur and Rourkela under Hindustan Steel Limited and at Jamshedpur (TISCO) and Burnpur (IISCO) during the period April—December, 1974, was 4.440 million tonnes as against 4.285 million tonnes during the corresponding period last year. The production of saleable steel during this period came to 3.540 million tonnes against the production of 3.209 million tonnes in April—December, 1973. Thus, the

production of both ingot steel and saleable steel exceeded last year's production, the excess in the case of saleable steel being as much as 3,31,000 tonnes representing an increase of nearly 10.3%. The position would have been still better but for the impact of certain external factors. In the last quarter of 1973-74, a drastic cut had to be imposed on production in keeping with the minimal flow of raw materials resulting from intermittent slow down and industrial unrest in the Railways. The production in the month of April, 1974, had also to be restricted in all the plants on account of low stocks of raw materials including coal. From the beginning of May, 1974, the plants had to operate at the minimum level compatible with considerations of technological safety of plant and equipment in order to meet the situation arising from the Railway strike. This was done by resorting to planned blanking of some coke ovens and stopping of some of the blast furnaces and steel-making and rolling units. The production, however, picked up gradually from the month of June, 1974, after the Railway strike had been called off and particularly because the supply of coking coal to the steel plants had been maintained at a satisfactory level during the strike period, resulting in appreciable improvement in stocks. Another factor which affected production was the shortage in the supply of power from the D.V.C. for the steel plants as well as the coal washeries in the region served by the Corporation till about the middle of August, 1974. There were also severe restrictions on the supply of power from the Orissa State Electricity Board to the Rourkela Steel Plant. The over-all supply of coking coal to the steel plants again became unsatisfactory in the last quarter of 1974, affecting the rate of coke oven pushing in all the steel plants considerably.

The position in regard to supply of power from the D.V.C. has improved significantly from September, 1974 onwards. Some additional power from the D.V.C. has also been arranged for Rourkela Steel Plant. Further, concerted efforts are being made to maximise production during the remaining months of the year taking full advantage of better power availability

and improved rail transport. Close and constant liaison continues to be maintained with the concerned agencies to ensure adequate supply of power to the steel plants and with the Department of Coal and the Railways, in regard to getting adequate supplies of coking coal and movement thereof to the steel plants. Certain other short term and long-term measures, to overcome the shortcomings and impediments in the way of improved production, are also proceeding apace. Greater emphasis is being laid on the maximisation of production of saleable steel as the need of the economy is for saleable materials. The total stock of ingots at the steel plants has been reduced by about 45,000 tonnes during the period April to November, 1974. In addition to picking up ingots from stock and rolling them out as saleables in the steel plants, about 55,000 tonnes of ingots obtained from Bokaro have been rolled at Bhilai, TISCO and IISCO, producing an estimated quantity of 44,000 tonnes of saleable steel.

New Steel Plants

The Detailed Project Report for the Salem Steel Project was received from the Consulting Engineers on December 30, 1974. The total capital requirement has been estimated at Rs. 552.60 crores. Meantime, work is on hand in regard to the engineering of the first phase of the project which envisages the setting up of a Cold Rolling Mill Complex for manufacture of 30,000 to 35,000 tonnes of cold rolled stainless steel sheets/strips per year initially with imported hot rolled stock.

The Steel Authority of India Limited are taking steps for the preparation of the Detailed Project Reports in respect of Visakhapatnam and Vijayanagar Steel Projects each of which would have an ultimate capacity of about 3 million tonnes of ingot/liquid steel. Meanwhile, work relating to the acquisition of lands required for these two projects and studies for the development of infrastructure facilities are progressing satisfactorily.

Extension of the period of take-over of the management of Indian Iron & Steel Co. Ltd.

The management of the Indian Iron & Steel Company Limited was taken over by the Government of India with effect from the 14th July, 1972, initially for a period of two years, through an Act of Parliament. This had been done to improve the technical health of the Plant which had deteriorated owing to neglect of maintenance/replacement and repairs over a long period of time. In view of the necessity for carrying out repairs/replacements to restore the capacity of the Plant to its rated level, the need for continuity of control over the management of the Company by various public sector institutions, and the need to stabilise the improvements already made in the administration, the period of take-over of the management of the Company has been extended by three years with effect from the 14th July, 1974 through an amending Act of Parliament. Enabling provisions have also been made for further continuance of the take-over by a period of 5 years, if necessary.

SAIL International Limited

SAIL International Limited, a wholly-owned subsidiary of Steel Authority of India Limited, was incorporated on the 10th June, 1974 with its Registered Office at Calcutta, with an authorised capital of Rs. 50 lakhs. The main objects of the Company are to organize and undertake exports and imports, explore and develop new markets or suppliers etc. in respect of iron and steel products, scrap, ores, ferro-manganese, ferro-silicon, pellets etc. including technical know-how and consultancy services.

MECON's Reports for Bangladesh and Dubai

The Metallurgical and Engineering Consultants (India) Limited (MECON) have been entrusted by Government with the preparation of a feasibility report for a sponge iron steel

plant complex for Bangladesh, based on Indian ore and locally available natural gas. An interim report was given by the Company in September, 1974, and the final report in December, 1974.

MECON have also been commissioned by the Government of United Arab Emirates to prepare a feasibility report for the setting up of a sponge iron steel plant complex at Dubai, with a capacity of about 400,000 tonnes of sponge iron and 300,000 tonnes of billets per annum. This plant too would be based on Indian iron ore and local natural gas. The report has been given in December, 1974.

Financial results of undertakings

The financial results of 1973-74 have been encouraging in the case of a number of undertakings under this Department. Hindustan Steel Limited made a profit of Rs. 4.71 crores as against a loss of Rs. 27.8 crores in 1972-73. It may be mentioned that this is the first time that HSL has made a profit, after 1965-66. The National Mineral Development Corporation also made a profit of Rs. 1.58 crores as against a loss of Rs. 1.12 crores in the previous year. Metallurgical & Engineering Consultants (India) Limited also made a profit of Rs. 45.14 lakhs in 1973-74, the first year of its working. Hindustan Steelworks Construction Limited continued to make profit, though, at Rs. 94 lakhs, it was marginally less than in the previous year when it was Rs. 101 lakhs.

Streamlining of the distribution system

During the year under report, the system of steel distribution has been streamlined on the basis of detailed studies and linear programming undertaken by the Steel Authority of India Ltd., in order to achieve the objective of meeting the requirements of the consumers speedily. It has been decided to move steel materials from the steel plants to stockyards in rake-loads in most cases. This will ensure optimum utilisation of the Railway wagon capacity and expeditious movement from the steel plants.

Vigilance has also been intensified during the year under review, to check on proper utilisation of allotted iron and steel materials, and these have had a salutary effect on the steel market in general.

National Metallurgists Day

The 12th National Metallurgists Day was celebrated at Bombay on the 14th November, 1974, when 4 distinguished metallurgists were honoured with cash awards of Rs. 3,000 each for their outstanding contribution in various fields of metallurgy.

FUNCTIONS AND ORGANISATIONAL SET-UP OF THE DEPARTMENT OF STEEL

The Department of Steel forms part of the Ministry of Steel and Mines and is responsible for :

(a) coordinating the growth of the steel industry both in the public and the private sectors—including re-rolling mills, alloy steel and ferro-alloys industry;

(b) implementation of the Iron and Steel (Control) order 1956;

(c) formulation of policies in respect of the distribution and imports/exports of iron and steel; and

(d) input industries relating to iron ore and manganese ore, required mainly by the steel industry. On October 11, 1974, matters relating to production, supply, distribution and prices of Coking Coal and the Bharat Coking Coal Ltd. were transferred from this Department to the Ministry of Energy (Department of Coal). The subjects allocated to the Department of Steel are shown in Appendix I.

The Steel Authority of India Limited and its subsidiaries are among the subjects allocated to the Department of Steel. Hindustan Steel Limited, Bokaro Steel Limited, Salem Steel Limited, Hindustan Steelworks Construction Limited, National Mineral Development Corporation, Metallurgical and Engineering Consultants (India) Limited, and SAIL International Limited (registered on June 10, 1974)) are wholly owned subsidiaries of SAIL. In addition, SAIL have share holdings in Indian Iron and Steel Company Ltd., Mysore Iron and Steel Limited, Metal Scrap Trade Corporation Limited, Bolani Ores Limited and Manganese Ore (India) Limited.

The Chairman of the Steel Authority of India Ltd. is also the Secretary in the Department of Steel. The other Secretariat posts include one post of Additional Secretary, four posts of Joint Secretary, three posts of Director (including the post of Internal Financial Adviser), three posts of Deputy Secretary and six posts of Under Secretary. In addition, there is a Technical Wing which at present comprises one Industrial Adviser, three Development Officers and two Assistant Development Officers posted in the Secretariat and one Industrial Adviser and two Development Officers attached to the office of the Iron and Steel Controller at Calcutta.

The Iron and Steel Controller is responsible for the implementation of the Iron and Steel (Control) Order, 1956 and for formulating proposals for import/export policies. As Chairman of the Joint Plant Committee, he supervises the receipt and planned distribution of indents for supply of steel to consumers. In this work, he is guided by the Steel Priority Committee, of which the Secretary in the Department of Steel is the Chairman. He also publishes a Quarterly bulletin captioned "Iron and Steel Control" which contains statistical information regarding production of iron and steel items and other matters of interest to Government, the traders and consumers of Iron and Steel.

There are six Regional Offices under the Iron and Steel Controller at New Delhi, Calcutta, Bombay, Madras, Hyderabad and Kanpur. These are small offices which are officer-oriented in their functioning. Their main functions are :

(i) To conduct inspections and take other necessary measures to ensure that the consumers who receive steel materials on a priority basis from Producers' Works and Stockyards do not misutilise them;

(ii) To ensure that the Producers' Stockyards strictly adhere to the procedure laid down by the J.P.C. for issue of steel materials from the stockyards ;

(iii) To exercise a check over the registered billet re-rollers to ensure that they follow the discipline laid down by the Billet Re-rollers Committee with regard to the rolling programme and the allocations made by the Committee;

(iv) To ensure that the industrial units which are allowed import of raw-materials etc. on the basis of essentiality certificates issued by the Iron and Steel Controller, utilise them for the purpose for which they have been imported; and

(v) To keep a watch over market trends and open market prices of steel materials.

The inspections carried out and the vigilance exercised by these offices have resulted in a sharp decline in the abuses in the distribution and utilisation of steel.

PROGRESSIVE USE OF HINDI

The Hindi Cell of the Department of Steel comprises one Hindi Officer, four translators and two typists. Besides doing translation work, this Cell deals with the implementation of instructions issued by the Ministry of Home Affairs regarding progressive use of Hindi in the work of the Government of India, and the Hindi Teaching Scheme of the Ministry of Home Affairs.

Noting and Drafting in Hindi

Most of the noting and drafting in the Hindi Cell is done in Hindi. Hindi noting has also been introduced as an experimental measure, in Administration Sections. Instructions have been issued to all the Sections to write short/routine notes in Hindi. The officers have also been requested to record short notes in Hindi to the extent possible, so that it may serve as an encouragement to the staff working under them to use Hindi.

Progress of Translation of Statutory Material

The Iron and Steel (Control) Order, 1956, as amended from time to time, has already been translated into Hindi and is under print.

Training of Government servants in Hindi/Hindi Typewriting/ Hindi Stenography

The position is as under :

Total No. of employees (Class I, II & III)	200
Total No. of employees possessing requisite Hindi qualifications	125
Total No. of employees who have passed Prabodh, Praveen and Pragya/Intensive Courses/ Special Departmental Examinations etc.	45
	170
Total No. of employees to be trained	30

	Trained	Yet to be trained
No. of employees trained in Hindi Typewriting	2	38
No. of employees trained in Hindi Stenography	2	23

Official Language Implementation Committee

An official Language Implementation Committee has been set up in the Department. The Committee periodically reviews the progress made in the use of Hindi for official purposes in the Department, its attached/subordinate offices and Undertakings and decides on the measures to be taken to accelerate its use in Government work. The Regional Iron and Steel Controller, New Delhi, representatives of the Steel Authority of India Limited, and Kendriya Sachivalaya Hindi Parishad are members of this Committee. A representative of the Ministry of Home Affairs is also invited to take part in the deliberations of this Committee. So far eight meetings of this Committee have been held.

Liaison Committee

A small committee consisting of one representative each of the Ministry of Home Affairs, the Central Translation Bureau, the Official Language (Legislative) Commission, and this Department maintains liaison between these translation agencies and helps in expeditious disposal of translation work.

Inspections

During the year under review the Hindi Officer of this Department inspected the Iron and Steel Controller's Office at Calcutta to review the implementation of the provisions of the Official Languages Act and the administrative instructions issued thereunder on the progressive use of Hindi in that office. Statistical data (covering the quarters ending 31-3-1974, 30-6-1974, 30-9-1974 and 31-12-1974) regarding the use of Hindi in the work of this Department are given below :—

Correspondence

	No. of letters received in Hindi	No. replied to in Hindi	No. replied to in English
(a) From States/Union Territories which have adopted Hindi for purposes of communication with Government of India.	41	13	5*
(b) From Ministries/Departments/ Offices.	33	20	—
(c) From Public/Individuals	145	16	6*
Documents issued in both Hindi and English			
(i) No. of Notifications	71		
(ii) Fulfilment of Assurances given in Parliament	110		
(iii) Annual Administration Report of the Department for the year 1973-74.			

*Efforts being made to send replies to such communications only in Hindi.

1	2	3	4
(iv) Government Reviews on the annual reports of :			
(a) National Mineral Development Corporation			
(b) Mysore Iron and Steel Limited			
(v) Agenda notes and minutes of the Meetings of the Staff Council held from time to time.			
(vi) Agenda notes and record minutes of the Consultative Committee Meetings held on 18-3-1974 and 24-6-1974.			

PLANNING AND DEVELOPMENT

The rapid development of iron and steel industry the World over reflects that steel is not only an indispensable basic material from the point of view of industrial progress but is also a material finding new uses and wider application in the technologically advanced sectors. In view of the increasing level of economic activity, steel demand continues to be quite high in almost all the steel producing countries. The total World production of crude steel is expected to touch a level of 592 million tonnes in 1975 and 915 million tonnes in 1980.

Development of Steel Industry through Five Year Plans

First Five Year Plan

Soon after independence, it was decided that rapid development of steel capacity was essential to support a large industrial base in the country. In the first Five Year Plan (1951-56) one iron and steel plant in the public sector to produce about 800,000 tonnes of pig iron and 356,000 tonnes of steel was proposed to be set up. In addition to the development of private sector iron and steel industry, it was estimated that Mysore Iron and Steel Works at Bhadravati would be able to produce about 60,000 tonnes of finished steel by 1955-56. The targets laid down for the First Five Year Plan could materialise only by 1959 and the steel production during this Plan period increased from 1.45 million tonnes to 1.6 million tonnes only. However, preparatory work for the three public sector steel plants of one million tonne capacity each was completed by the end of the Plan period and the foundation was thus laid for rapid advancement in the iron and steel industry in the Second Plan.

Second Five Year Plan

The iron and steel sector saw the most ambitious development during the Second Five Year Plan (1956-61) when expansion of TISCO from 1.0 to 2.0 million ingot tonnes, increase in capacity of Indian Iron and Steel Company from 0.5 million tonnes to 1 million ingot tonnes and setting up the three steel plants in the public sector at Bhilai, Rourkela and Durgapur, each with a million ingot tonne capacity was taken up. This Plan also provided for expansion of steel production at Bhadravati Works of Mysore Iron and Steel Limited to 100,000 tonnes by 1960-61. The ingot steel production by the end of the Second Five year Plan was 3.35 million tonnes.

Third Five Year Plan

The Third Five Year Plan (1961-66) provided for a capacity of 10.2 million ingot tonnes of steel capacity and 1.5 million tonnes of pig iron for sale. The share of the private sector in the steel target was 3.2 million ingot tonnes. In addition to the installed capacity of 3 million ingot tonnes with TISCO and IISCO, expansion of steel capacity in the private sector was expected to come through the installation of scrap based electric arc furnaces. In the public sector, additional capacity was envisaged from the expansion of Bhilai Steel Plant to 2.5 million ingot tonnes, Rourkela Steel Plant to 1.8 million ingot tonnes and Durgapur Steel Plant to 1.6 million ingot tonnes. Mysore Iron and Steel Limited was also planned to attain a capacity of 100,000 tonnes. In addition to this, a new steel plant at Bokaro and pig iron projects based on low shaft blast furnace technique were envisaged. Investments required for increasing production of limestone at Nandini and of iron ore at Dalli-Rajhara Mines and Barsua were also provided for.

However, at the end of the Third Five Year Plan, the actual production was only 6.4 million ingot tonnes from integrated steel plants.

Fourth Five Year Plan

The Fourth Five Year Plan started in 1969-70 and was based on maximum utilization of existing capacity and on advance action for additional steel capacity required to meet future needs. An installed capacity of 12 million ingot tonnes was envisaged by the end of the Fourth Plan. The actual expenditure incurred during the Fourth Five Year Plan in the steel sector was Rs. 877.88 crores* and most of it in the new steelworks at Bokaro. As a result of slippage in the commissioning schedule of Bokaro, no additional capacity in fact became available during the Fourth Plan. However, additional capacity of 1.7 million ingot tonnes from Bokaro will become available in 1975-76, the second year of the Fifth Plan.

Draft Fifth Five Year Plan

The draft Fifth Five Year Plan is centred round the expansion of Bhilai Steel Plant from its present capacity of 2.5 million tonnes to 4 million ingot tonnes and continuing work on Bokaro to achieve a capacity of 4.75 million ingot tonnes by 1978-79. The existing integrated steel plants have a total capacity of 8.9 million ingot tonnes equivalent to 6.5 million tonnes of finished steel per annum. The expansion of Bhilai and Bokaro would make available an additional ingot capacity of 6.25 million tonnes, equivalent to 5.4 million tonnes of finished steel. Taking into account the production build-up in the expanded plants and the capacity utilisation in the existing plants, it is estimated that about 8.8 million tonnes of finished steel would be available by 1978-79. According to present indications, the electric arc furnace units are expected to contribute at least one million tonnes of bars and rods. Projections of demand and availability of mild steel during the Fifth Five Year Plan period are shown in Appendix II.

*This does not include expenditure on BCCL, NMDC, etc. which came under the purview of the Department of Steel towards the last year of the Fourth Plan period.

New Steel Plants

Work is being continued on the three new steel plants at Salem, Visakhapatnam and Vijayanagar. The Salem Steel Plant is being designed for the production of 195,000 tonnes of sheets and strips per annum—70,000 tonnes of stainless steel sheets, 75,000 tonnes of electrical steel sheets and 50,000 tonnes of other special steels. The Detailed Project Report was received from the Consulting Engineers on December 30, 1974. Meanwhile, the first phase of the project has been taken in hand which envisages the setting up of a cold rolling mill complex for the production of 30,000 to 35,000 tonnes of cold rolled stainless steel sheets and strips, initially with imported hot rolled stock. For the Visakhapatnam and Vijayanagar projects, the Steel Authority of India Limited are taking steps for the preparation of the Detailed Project Reports.

SAIL have also commissioned certain feasibility studies for new steel capacity on greenfield locations. The draft Fifth Five Year Plan provides outlays for preparation of such reports. However due to the serious constraint on resources, such studies can be made use of for steel development only in the Sixth and succeeding Plan periods.

Electric Arc Furnace Industry

Due to the constraint on financial resources, and the high capital cost of putting up integrated steel plants, and the rapidly depleting reserves of coking coal and the limitations in developing infrastructure facilities required for the large integrated steel mills, emphasis has been laid on developing electric steelmaking capacity, the major advantages of which are low capital investment, shorter gestation period, flexibility with regard to types of steel to be produced, possibility of meeting regional demands by adding incremental capacity from time to time in line with the demand etc. The schemes sanctioned would add up to a capacity of about 5 million tonnes by the end of 1975. There has been considerable under-utilization of the electric furnace capacity in

the country due to serious power shortages faced in most of the States. Even if the power situation improves, there would be a constraint in the utilization of the capacity since, from the assessment made, the availability of ferrous scrap by 1975 is not likely to be more than 2.2 million tonnes per year. There is, therefore, need to create capacity for production of sponge iron which could substitute ferrous scrap charged in electric arc furnace by about 50%.

Sponge Iron

Sponge iron is a highly reduced product of iron ore and is obtained by the direct reduction of iron ore using either solid reductants (non-coking coal) or gaseous reductants. The processes based on natural gas as reductant have been in successful operation in some countries and are commercially exploited. There has been limited success with regard to the processes using non-coking coal. The need to develop adequate capacity for the production of sponage iron has been recognised and, so far, 0.74 million tonne capacity has been licensed to various State Industrial Development Corporations. Of these, the unit of the Andhra Pradesh Industrial Development Corporation, with an initial capacity of 30,000 tonnes per annum is being implemented with UNDP assistance. The Gujarat Industrial Investment Corporation are planning to set up a 180,000 tonnes per year plant based on natural gas. Utilising the experience gained at these two plants, it would be possible to work out a detailed plan for setting up production capacity for sponge iron in the country.

Alloy and Special Steels

The major scheme to be implemented during the Fifth Five Year Plan in the area of alloy and special steels production is the expansion scheme of Mahindra Ugine Steel Company at Khopoli in Maharashtra. Government have permitted expansion of the capacity of this plant from 36,000 tonnes to 60,000 tonnes of tool, alloy and special steels, and on present indications, this

capacity would become available by 1977-78. In addition, Bihar Alloy Steels Limited are expected to be in production by 1975-76. The annual capacity of this plant, which is being put up at Patratu in Bihar, is 40,000 tonnes. Taking into account the versatility of the electric arc furnaces to produce a wide range of alloy and special steels and keeping in view the growing demand for these qualities of steels, Government have permitted electric arc furnace units to diversify into manufacture of certain categories of carbon and low alloy steels. This would enable the arc furnace industry to equip itself with the necessary technological inputs and would also widen its field of operation. The Table (Appendix III) shows the likely availability of alloy steels from the capacity already created in the country.

Even though surpluses are indicated, some imports of alloy steel would become inescapable since the facilities available in many electric arc furnace units may not permit production of high alloy steels which would have to be imported to bridge the shortfall.

Research and Development

Considering the crucial place in the country's economic development which the iron and steel industry occupies, it has been considered essential to draw up a programme of research and development activity for the steel industry. The Research and Development Organisation of Hindustan Steel Limited functioning under SAIL has been entrusted with the task of coordinated implementation of the R & D Plan. An outlay of Rs. 20 crores has been provided in the Draft Fifth Plan and various projects have been identified with the ultimate aim of achieving self-reliance through increased productivity, import substitution and development of new process and technology in the manufacture of iron and steel.

STEEL AUTHORITY OF INDIA LIMITED

The authorised capital of the Company is Rs. 2,000 crores. Its paid-up capital as on 31-3-1973 was Rs. 1,294.41 crores. During the year 1973-74, an amount of Rs. 23.6278 crores was subscribed by Government as equity capital to enable the Company to finance capital expenditure of its subsidiaries, to meet some of its preliminary expenses for investment in steel and allied industries and for meeting certain other development expenditure. In addition, shares in the name of the President worth Rs. 9.1629 crores were transferred to the Company. The paid-up capital as on 31-3-1974 was Rs. 1,317.48 crores. An amount of Rs. 9.7197 crores including Rs. 45.19 lakhs for shares transferred was pending for allotment on that date.

The Company's investments increased from Rs. 1,293.81 crores as on 31-3-1973 to Rs. 1,326.09 crores as on 31-3-1974. The equity investment position in the various companies in which the Steel Authority of India Limited has acquired interest is indicated below :

(Rs. in lakhs)

Name of the Company	As on 31-3-73	As on 31-3-74
1	2	3	4
Subsidiaries		
1. Hindustan Steel Limited	60833.95	62358.00
2. Bokaro Steel Limited	59999.95	60000.00
3. Salem Steel Limited	4.95	356.53
4. National Mineral Dev. Corpn.	6999.97	8204.00
5. Bharat Coking Coal Limited	85.01	185.01
6. Hindustan Steelworks Const. Ltd.	49.95	50.00
7. Bolani Ores Limited	50.49	50.50
8. Metal Scrap Trade Corpn. Ltd.	—	16.00
9. Metallurgical & Engg. Consultants (India) Limited	—	0.05
TOTAL :	128024.27	131220.09

Name of the Company	As on 31-3-73	As on 31-3-74
1	2	3	4
Other Companies		
1. Indian Iron & Steel Ltd.	0.46	32.43
2. Manganese Ore (India) Ltd.	36.62	36.62
3. Mysore Iron & Steel Ltd.	1320.00	1320.00
TOTAL :	1357.08	1389.05

In addition, Government loans amounting to Rs. 118.60 crores were advanced to the Company during 1973-74 for its subsidiaries.

SAIL International Limited, a wholly owned subsidiary of SAIL was incorporated on the 10th June, 1974, with its registered office at Calcutta. Its authorised capital is Rs. 50 lakhs and paid-up capital is Rs. 5 lakhs. The Company is to act as an Export House and would coordinate imports and exports of steel materials.

Bharat Refractories Limited, a wholly owned subsidiary of Bokaro Steel Limited, was incorporated on the 22nd July, 1974 with an authorised capital of Rs. 1.0 crores. This Company will own and manage the refractory plant which was acquired by Government under the Asian Refractories Limited (Acquisition of Undertaking) Act, 1971.

The work relating to Bharat Coking Coal Limited, one of the subsidiaries of the Company, has been transferred to the Ministry of Energy (Department of Coal) and necessary formalities for the transfer of its assets and liabilities are likely to be completed shortly.

The production of steel by the integrated steel plants in general and the public sector steel plants under Hindustan Steel Limited in particular and of coal by the Bharat Coking Coal

Limited and of iron ore by the National Mineral Development Corporation was adversely affected in 1973-74 mainly on account of power shortage, coal shortage and rail transport difficulties. Having regard to the urgent need to raise the level of production as rapidly as possible, the Steel Authority of India Limited took a number of steps to remove these bottlenecks by effective co-ordination of the activities of all the concerned organisations.

In order to ensure that production for 1974-75 is planned as realistically as possible, the targets of production for the year were drawn up by the Company after making an assessment of the availability of power, coal, other essential inputs and Railway transport and after determining the sources of supply and raw-material linkages. The targets of production for each of the steel plants for 1974-75 were also discussed between the managements and workers at the plant level and agreed to by the Joint Negotiating Committee for the Steel Industry. The yearly plan has been broken down into monthly targets which are regularly monitored by SAIL. During the Railway strike in May, 1974, SAIL coordinated the operations of all the steel plants in order to meet the situation created by the strike and its aftermath in a planned manner.

Right from its formation, SAIL has been maintaining continuous coordination with the Railways in the matter of movement of principal inputs like coking coal, iron ore and other raw materials and despatch of finished products. Initially, the meetings were held monthly but their frequency was increased to fortnightly and weekly meetings, ultimately culminating in daily coordination with the Railway Board and also monitoring through a monitoring cell at Calcutta at the field level everyday. This coordination involves the organisations producing coal, the coal washeries, the Coal Controller, General Managers and Chief Operating Superintendents of the concerned Railways and the steel plants.

With a view to ensuring adequate availability of major raw materials, a number of steps for development of new iron ore mines and modifications to existing mines are being taken up. This includes mechanization of Dalli Mines at Bhilai, development of Meghahatuburu Mines for Bokaro and modifications to Kiriburu Mines for Bokaro. Action has also been initiated for the reconstruction of the existing mines and development of new mines under Bharat Coking Coal Limited and the installation of new washeries at Sudamdih and Monidih.

Comprehensive studies have been carried out by the Company to project the requirements and the likely availability of power at each of the Steel Plants. Proposals have been worked out for the augmentation of in-plant generation facilities which are presently under examination. A number of steps have also been taken to increase the availability of power in the short-term. A new line has been laid for supply of power from Bokaro Steel Limited to Dugda Washery. Assistance was given by way of supply of steel for early completion of the Talcher-Balimela link by the Orissa State Electricity Board. Power generation from the captive generating units at the steel plants was also improved. The installation of diesel generating sets of an aggregate capacity of 20 MW at an estimated cost of Rs. 3.42 crores for supply of emergency power to the Bharat Coking Coal Limited was sanctioned.

Testing of iron ore to establish the suitability for production of sponge iron by direct reduction has been undertaken. Samples from Barajamda, Bellary-Hospet and Goa have been sent to USA. Part data have been received and the results are encouraging.

Special attention has been paid to improve and stabilise industrial relations and to secure greater worker involvement in the public sector steel plants. There has been no major dislocation in the steel plants on account of industrial unrest during the current financial year. Discussions with the representatives of Central Trade Unions and those of recognised Unions in the

meetings of the Joint Negotiating Committee for the Steel Industry on most of the issues common to all the steel plants, have greatly contributed to better understanding and appreciation of the problems.

The Central Research & Development Organisation has undertaken a number of development programmes, the more important of which are indicated below.

(i) Experimental non-coking coal dust injection in blast furnaces.

(ii) Use of formed coke in Blast Furnaces.

(iii) Improvement in Blast Furnace productivity and reduction in coke rate.

(iv) Development of better quality pouring refractories.

In connection with the long-term steel development programme, SAIL has commissioned MECON to prepare feasibility reports for setting up new steel capacity near Surajgarh in Maharashtra and Bailadila in Madhya Pradesh.

A number of capital schemes have been sanctioned/recommended to Government for sanction, for diversification and maintenance of production and for expansion during the current financial year (up to December, 1974). The important amongst them are indicated below :

(i) Installation of a refractories plant at Bhilai at an estimated cost of Rs. 28.4 crores.

(ii) Setting up an additional 330 MW coal-based thermal power plant at Bokaro at an estimated cost of Rs. 101.8 crores.

(iii) Certain capital schemes connected with 4.0 million ingot tonnes expansion of Bhilai.

SAIL has made an assessment of the requirements of spares for the public sector steel plants. A scheme for the establishment of a central workshop for the manufacture of certain

medium and heavy range vital spare parts common to the steel plants at an estimated cost of Rs. 20.58 crores is under examination.

SAIL continues to assist Government in improving and streamlining procedures for distribution of steel.

Financial results of leading subsidiary companies of SAIL in 1973-74

The financial results of the subsidiary companies improved considerably during 1973-74 as compared to the previous year.

Hindustan Steel Limited

Hindustan Steel Limited, which controls the operations of the Bhilai Steel Plant, Rourkela Steel Plant, Durgapur Steel Plant and the Alloy Steels Plant in Durgapur, made a profit of Rs. 4.7 crores in 1973-74 whereas in the previous year this company had suffered a loss of Rs. 27.8 crores. Bhilai Steel Plant and Rourkela Steel Plant made a profit of Rs. 17.78 crores and Rs. 9.7 crores respectively in 1973-74. The unsettled conditions in Durgapur resulted in both the plants incurring a loss of Rs. 23.24 crores made up of Rs. 18.44 crores by Durgapur Steel Plant and Rs. 4.80 crores by Alloy Steels Plant in 1973-74. The loss was higher in 1972-73 at Rs. 32.01 crores.

National Mineral Development Corporation Limited

The National Mineral Development Corporation Limited, recorded a profit of Rs. 1.58 crores in 1973-74 as compared to the loss of Rs. 1.12 crores it had incurred in the previous year.

Metallurgical & Engineering Consultants (India) Limited

This new company made a profit of Rs. 45 lakhs in the first year of its operation, i.e. in 1973-74.

Hindustan Steelworks Construction Limited

Hindustan Steelworks Construction Limited made a profit of Rs. 94 lakhs in 1973-74 as compared to Rs. 101 lakhs during the previous year.

HINDUSTAN STEEL LIMITED

Investment

The authorised capital of the Company is Rs. 700 crores. The paid-up capital as on 31-3-1974 was Rs. 623.58 crores. The entire capital is owned by the Steel Authority of India Limited.

Long-term loans advanced by Government to the Company amounted to Rs. 384.73 crores as on March 31, 1973. The Company repaid an amount of Rs. 25.976 crores during 1973-74, bringing down the outstanding on this account to Rs. 358.75 crores as on March 31, 1974.

In addition, the Company owed to Government an amount of Rs. 24.95 crores as on 31-3-1973 on account of short-term loans sanctioned from time to time to enable it to finance capital expenditure on schemes other than new capital schemes and expansion of townships. The Company repaid an amount of Rs. 10.20 crores in 1973-74, leaving a balance of Rs. 14.75 crores as on March 31, 1974.

During 1974-75, a sum of Rs. 15.0 crores has been subscribed by Government towards the equity capital of SAIL upto December, 1974, for financing expenditure on the major capital schemes and for expansion of the townships of the Company.

Production

The following table indicates production in the various units of the Company during the year 1973-74 and for the period April-December, 1974 :—

(in thousand tonnes)

Plants/Units	Ingot Steel	Saleable Steel
1	2	3
Bhilai Steel Plant		
1973-74	1894	1682
April-December, 1974	1451	1238
Durgapur Steel Plant		
1973-74	776	377
April-December, 1974	592	387
Rourkela Steel Plant		
1973-74	1081	736
April-December, 1974	754	567
Total (Bhilai, Durgapur & Rourkela)		
1973-74	3751	279 5
April-December, 1974	2797	2192
Alloy Steels Plant, Durgapur		
1973-74	55:3	35.1
April-December, 1974	56.05	27.35
Fertilizer Plant, Rourkela	Calcium Ammonium Nitrate (25%N2)	
1973-74	184	
April-December, 1974	168	

The total production of ingot steel from the Bhilai, Durgapur and Rourkela Steel Plants during the period April-December, 1973, was 2.825 million tonnes and of saleable steel 2.057 million tonnes. Thus, while the production of ingot steel during the period April-December, 1974, fell short of the production

in the corresponding period last year by 28,000 tonnes, the production of saleable steel exceeded last year's production by 1,35,000 tonnes.

The production in the last quarter of 1973-74 had been restricted on account of intermittent slow-down and industrial unrest in the Railways, especially in the South Eastern and Eastern Railways which affected movement of coal and other raw materials and of finished products and thus necessitated the imposition of drastic cuts on production in keeping with the minimal flow of raw materials. The production in April, 1974, had also to be restricted on account of low stocks of raw materials including coal. From the beginning of May, 1974, the plants were operated at the minimum level compatible with considerations of technological safety of plant and equipment in order to meet the situation arising from the Railway strike. The aim was to build up a comparatively comfortable stock of the principal raw materials which would be an insurance against any sudden stoppage of all the units because of the Railway strike. This was done by resorting to planned blanking of some coke ovens and stopping of some of the blast furnaces and steel making and rolling units. With the calling off of the Railway strike, production picked up gradually from the month of June, 1974, particularly as the supply of coking coal to the steel plants had been maintained at a satisfactory level during the strike period resulting in appreciable improvement in stocks.

Another factor which affected production during the current year was the shortage in the supply of power from the D.V.C. for the steel plants including Alloy Steels Plant, Durgapur, as well as the coal washeries in the region served by the Corporation till about the middle of August, 1974. The position has, however, improved significantly since then. There have been some severe restrictions on the supply of power from the Orissa State Electricity Board to Rourkela Steel Plant. Some additional power from D.V.C. has since been arranged for Rourkela.

The overall supply of coking coal to the steel plants during this period was also not quite satisfactory, affecting the rate of coke oven pushing in all the steel plants considerably.

The level of production in the Alloy Steels Plant at Durgapur has shown improvement as compared to its performance last year. There has also been an added emphasis on the production of high value items.

The level of production at the Fertilizer Plant at Rourkela is also much better than last year. The production in this plant has been affected to a certain extent on account of power shortage/restrictions.

Concerted efforts are being made by the management of the Company under the overall supervision and direction of SAIL to maximise production during the remaining months of the year, taking full advantage of better power availability and improved rail transport. Greater attention is being paid to the production of saleable steel as the need of the economy is for saleable steel and the working results of the steel plants mainly correspond to the production of saleable steel. There is also the need to convert the stocks of ingot steel available at the steel plants and the ingots produced at Bokaro into saleable steel. During the period April-November, 1974, Bhilai has already rolled about 20,000 tonnes of ingots obtained from Bokaro Steel Plant.

Close and constant liaison is being maintained with the appropriate agencies to ensure adequate supply of power to the steel plants and rail movement and, in particular, with the Department of Coal in regard to adequate supplies of coking coal. Other measures to overcome shortcomings and impediments standing in the way of improved production are also proceeding apace. These include : specialised repairs to coke ovens, rebuilding of coke oven batteries, improved maintenance aimed at better equipment availability, capital programmes required to correct existing imbalances in production facilities and planned procurement of spares, refractories and other essential inputs.

Despatches

The table below gives figures of despatches during the year 1973-74 and during the period, April—December, 1974 :

(In thousand tonnes)

Plants	Saleable Steel		Pig Iron	
	1973-74	April-Dec., 1974	1973-74	April-Dec., 1974
1	2	3	4	5
Bhilai	1518	1287	482	417
Durgapur	443	434	95	71
Rourkela	710	585	44	62
Total :	2671	2306	621	550
Alloy Steels Plant	36.0	27.541		
Fertilizer Plant, Rourkela	(Calcium Ammonium Nitrate) 161	181.5		

Exports

In 1973-74, the total exports made by the Company came to 457,400 tonnes comprising pig iron (including pig iron made available by Bokaro Steel Plant), rails and G. C. sheets at a total FOB value of Rs. 18.6 crores.

As mentioned elsewhere, SAIL International Limited was registered on the 10th June, 1974, and the main function of this Company is to act as an Export House and to coordinate imports and exports of steel materials. The Company has also been declared as the canalising agency for export of steel.

During the period April—December, 1974, Hindustan Steel Limited exported 60,659 tonnes of pig iron (including 10,164 tonnes belonging to Bokaro Steel Ltd.) at F.O.B. value of Rs. 2.18 crores.

Imports

During 1973-74, a total quantity of 827,593 tonnes valued at Rs. 168.96 crores was imported by the Company for the home market.

To keep pace with the rising domestic demand and to make up for the shortfall in indigenous production, the Company continued arrangements for the bulk import of steel for small scale industries, export-oriented engineering industries and other actual consumers. The Company also continued to operate the Steel Rank on Government account. The imports during the period April—December, 1974, came to 7,66,000 tonnes.

Working Results

The gross sales of the Company went up from Rs. 591.07 crores in 1972-73 to Rs. 680.85 crores in 1973-74. The net sales in 1973-74 came to Rs. 547.02 crores as against Rs. 460.23 crores in 1972-73 i.e. an increase of 18%. After providing for depreciation amounting to Rs. 69.21 crores and interest amounting to Rs. 25.98 crores, and adjustments pertaining to earlier years, the Company earned a profit of Rs. 4.71 crores against a loss of Rs. 27.797 crores in 1972-73. The Company has made a profit for the first time after 1965-66. The working results of the various units of the Company in 1972-73 and 1973-74 and the cumulative results since inception are indicated below:

(Rs. in crores)

Plant/Unit	1972-73	1973-74	Cumulative since inception
Bhilai Steel Plant	(+)6.000	(+)17.778	(+)4.490
Durgapur Steel Plant	(—)25.722	(—)18.435	(—)175.623
Rourkela Steel Plant	(+) 1.186	(+) 9.737	(—) 17.960
Alloy Steels Plant	(—) 6.293	(—) 4.799	(—) 41.021
Fertilizer Plant, Rourkela	(—) 2.116	(—) 1.200	(—) 19.906
Coal Washeries	(—) 0.426	(+) 0.874	(+) 3.907
Unrealised profit on inter plant transfers	(—) 0.426	(+) 0.757	(—) 0.051
TOTAL	(—) 27.797	(+) 4.712	(—)246.164

The improvement in the working results is largely due to the average price increase of Rs. 75 per tonne given from the 18th September, 1973 followed by a further increase from the 15th October, 1973 which brought an extra income of Rs. 47·02 crores. However, the advantage accruing from these was offset to a very large extent on account of escalations in prices and costs during the year as indicated below:

	(Rs. in crores)
(i) Prices of Raw material	19.42
(ii) Prices of Stores & Spares	7.58
(iii) Power, fuel and water rates	3.18
(iv) Increase in dearness allowance and related costs	5.69
(v) Increase in demurrage rates	3.12
TOTAL	38.99

Industrial relations

By and large, the industrial relations situation in the various units of the Company has been normal during the current financial year except for some incidents of labour trouble in the Alloy Steels Plant, Durgapur.

Capital Schemes

The work on the implementation of capital schemes included in the Fourth Five Year Plan continued to progress. The mechanisation of the Dalli Mines of Bhilai is likely to be delayed further to about December, 1976, largely due to delay in the receipt of equipment from indigenous suppliers and the need for reinvestigation and redesigning of the crushing plant foundation on account of rock slips. Similarly, the setting up of the second sintering plant at Bhilai is now expected to be completed by

December, 1976, on account of delay in the receipt of equipment data and major technological equipments. The Detailed Project Report for the expansion of the capacity of the Bhilai Steel Plant from 2·5 to 4·0 million ingot tonnes was received in September, 1973. There has been a series of discussions between the Indian and Soviet sides regarding the details of the principal units of expansion, namely, the Plate Mill and the continuous Casting Plant. As a result of escalation in prices and of the proposed inclusion of a few new factories, the estimated cost of the project is expected to go up substantially from what was envisaged at the time of preparation of the Project Report. The main units are now likely to be commissioned by about the end of 1979. Work on the building of an additional (8th) coke oven battery is in progress, and the project is expected to be completed by June, 1975. The scheme for the setting up of a refractory plant at Bhilai is presently under the consideration of Government.

At Rourkela Steel Plant, the additional half coke oven battery has been completed and commissioned. The scheme for the installation of a spirally welded pipe plant at Rourkela with a production capacity of 55,000 tonnes has been approved by Government. The project is estimated to cost Rs. 15·10 crores. With a view to supplying the requirements of the Mathura Refinery to the maximum extent, the construction schedule of the project has been compressed and it is expected to be completed by the end of 1975-76. Work is proceeding apace on the setting up of a slag granulation plant at Rourkela. The question of setting up a plant at Rourkela for the manufacture of cold rolled grain-oriented steel sheets is still under consideration and a decision is likely to be taken in the near future.

An additional half coke oven battery is being set up at Durgapur Steel Plant at an estimated cost of Rs. 5·2 crores. The scheme which is being executed by Engineering Project (India) Limited in association with MECON is likely to be completed in 1976.

Refractory Plant of Assam Sillimanite Limited

The Refractory Plant belonging to M/s. Assam Sillimanite Limited and situated near Ramgarh in Bihar, the management of which had been taken over by the Government for a period of 3 years from 2nd November, 1972, under Section 18AA of the Industries (Development and Regulation) Act, 1951, continues to be managed by Hindustan Steel Limited on behalf of Government.

The question of restructuring Hindustan Steel Limited consequent on the formation of the Steel Authority of India Limited is still under examination.

Personnel

The total number of employees in Hindustan Steel Limited as on 31st December, 1974 is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

	Total	No. belonging to	
		S.C.	S.T.
Class I	8,541	61	14
Class II } Class III }	82,103	3,982	3,097
Class IV (excluding sweepers)	39,636	6,398	6,454
Class IV (Sweepers)	3,256	2,855	164
TOTAL	1,33,536	13,296	9,729

BOKARO STEEL LIMITED

GENERAL

The civil construction work on the first stage of the plant with a capacity of 1.7 million ingot tonnes steel and 880,000 tonnes of pig iron began in October, 1967. The first blast furnace was inaugurated by the Prime Minister on the 3rd October, 1972. After the commencement of pig iron production efforts were concentrated on accelerating work on the steel making and rolling facilities. The trial production of steel from the first converter started on the 27th December, 1973. The second converter was commissioned on the 4th April, 1974 while the Slabbing Mill was commissioned on December 30, 1974. With the projected completion of Hot Strip Mill during the second quarter of 1975, the finished steel will become available from Bokaro.

The second stage expansion of the plant was also approved in principle by Government in 1970 in continuation of the first stage construction. The Soviet Union offered to assist in this expansion programme also and, for this purpose, a protocol was signed with them on the 20th February, 1970. Under this, they agreed to make available credit up to 85 million roubles and to supply such equipment and materials as might be needed from the USSR. The Metallurgical and Engineering Consultants (India) Ltd. (MECON) were appointed as the Principal Consultants for the expansion and M/s. M. N. Dastur & Co. were given similar functions as in Stage I. The expansion work is in progress.

FINANCE

As on 31-3-1974, the authorised capital of the Company was Rs. 600 crores, which was fully paid up. In addition, the loan

capital drawn from the Steel Authority of India Limited amounted to Rs. 303.46 crores, including loan transferred by the Government of India. The position at the end of December, 1974, was as follows :

Equity

Rs. 600 crores

Loans

Rs. 417.46 crores

Project Estimate

The approved estimate for Bokaro Stage-I is Rs. 708 crores; and the off-site facilities were expected to cost Rs. 51 crores.

A revised estimate amounting to Rs. 757 crores for the plant proper and Rs. 68.8 crores for off-site facilities was submitted by the Company in January, 1973. Since then, a reappraisal of the construction schedule has been made, based on the construction progress achieved. Based on this review, the estimate for Bokaro Stage-I is being revised and is expected to be submitted to Government shortly.

Though the detailed estimates for Stage-II i.e. for expansion to 4 MT Stage have not yet been received by the Government from Bokaro Steel Limited, the updated Detailed Project Report, recently completed by MECON, indicates that the expansion will cost roughly Rs. 846 crores. The Government have also approved, in principle, an investment of Rs. 57.40 crores on expansion of the plant to 4.75 million tonne capacity. Detailed estimates for this expansion will be finalised only after the project report is prepared.

The capital expenditure on the project till 31-3-1974 amounted to Rs. 778.76 crores on Stage-I and Rs. 125.32 crores on Stage-II. The expenditure till 31-12-1974 was Rs. 830.23 crores on Stage-I and Rs. 173.76 crores on Stage-II.

Working Results

The total sales for 1973-74 amounted to Rs. 36.25 crores out of which Rs. 10.16 crores was in foreign exchange. However, the working results for the year showed a net loss of Rs. 10.43 crores after providing for depreciation of Rs. 9.85 crores. The cumulative loss since the beginning was Rs. 15.89 crores. The impact of depreciation on the working results has been high, due mainly to high capital cost of the project and the production units not being fully utilised in the initial stage. The cumulative depreciation up to 31-3-1974 amounted to Rs. 20.33 crores.

Production Performance

The first blast furnace complex commissioned on the 3rd October, 1972, continued to function well. The total output of 740,286 tonnes of hot metal during 1973-74, which was the first financial year of operation, was 80% of the rated annual capacity of the furnace. The production during the current year, despite raw material and transport constraints is also steady, with production during December, 1974, having touched 91.5% of the rated capacity. The cumulative production till December, 1974, was 1,610,349 tonnes.

The pushing of coke from the second battery was also started on October 18, 1973, the first battery having started production on September 9, 1972. The first million tonne output of coke was reached on April 9, 1974. The total till December 1974, was 1,719,950 tonnes against the target of 1,733,084 tonnes.

The first sinter band commissioned on the 19th September, 1972, has also functioned smoothly and has produced 2,335,453 tonnes of super fluxed sinter till the 31st December, 1974, against the target of 2,666,618 tonnes, i.e. 87.6% of the target. Due to shortage of coking coal, 100% sinter had at times been charged in the blast furnace.

The first 100-tonne converter was commissioned on the 31st January 1974, and the second on the 4th April 1974. The total production of ingot steel up to December 1974, was 90,140 tonnes against the target of 91,000 tonnes, i.e. 99% of the target.

The first 55 MW generator alongwith two boilers commissioned in the thermal power plant complex in July, 1972, has functioned smoothly generating on an average 50 MW of power. The second 55 MW generator was commissioned in October, 1973.

In order to ensure smooth movement of coal, road transport of a part of the coal requirement has been arranged. The transportation of coal by road has considerably improved the supply position. During April—December, 1974, 92,111 tonnes of coal was moved by road. The overall receipts of all the raw-materials, except iron ore fines from Noamundi and manganese ore, were satisfactory.

Construction Review

The following units were commissioned during the year 1974-75 :

(a) 2nd converter in the steel melting shop

(b) 3rd Turbo Generator and No. 3 boiler of thermal power plant

(c) pig casting machine No. 4 (with this, all the pig casting machines have been commissioned)

(d) induction furnace for cast iron in the ingot mould foundry

(e) 3rd oxygen compressor in the oxygen plant

(f) Slabbing Mill with 1 group of soaking pits.

A coordinated construction schedule for completion of all the stages of the plant up to 4 million tonnes capacity was drawn up in May 1973 by Bokaro Steel Ltd. in consultation with the main equipment suppliers and construction agencies and was approved by Government. This schedule was based on certain assumptions of prospective supply of equipment and progress of construction work. Some slippage has taken place in the schedule due to difficulties encountered by manufacturers and construction agencies. A review was accordingly made by Bokaro Steel Ltd. recently and a reassessment of the possible completion dates was made, taking into account the realistic rate of supply of equipment by indigenous manufacturers and of construction and erection. According to this review, all units in the 1.7 million tonne stage and the intermediate stage 2.5 million tonnes of the plant, with the exception of the cold rolling mills, are expected to be commissioned by December, 1975; and the cold rolling mill will be completed by December, 1976. The second stage i.e. the 4 million tonne stage is expected to be completed by December, 1977 and the five-stand cold rolling complex, by 1979.

The details of the progress of construction work in the 1.7 Mt., 2.5 Mt. and 4 Mt. stages of the plant are given in the tables below :

TABLE—I

1.7 Mt—CONSTRUCTION PROGRESS

Sl. No.	Description	Unit	Total qty.	Cumulative total	Percentage on total
1	2	3	4	5	6
				(as on 31-12-74)	
1.	*Excavation*	Cu.m.	*137,68,725*	*136,48,669*	99.1
2.	*Concrete & RCC*	Cu.m.	*20,11,641*	*19,76,950*	98.3
3.	*UGC*	m	*2,94,709*	*2,92,503*	99.3
4.	*Road*	m^2	*5,92,271*	*4,58,162*	77.4
5.	*Permanent tracks*	m	*1,50,023*	*1,24,154*	82.8
6.	*Controlled fill*	m^2	*52,70,000*	*52,66,150*	99.9
7.	Refractories receipt—				
	Indigenous	t	1,29,943	1,18,909	91.5
	Imported	t	79,773	79,344	99.5
8.	Refractories erection	t	1.81,200	1,45,167	80.1
9.	Structurals receipts				
	USSR Scope	t	16,476	16,036	97.3
	HEC Scope	t	28,780	27,614	95.9
	BSL Scope	t	56,692	56,059	98.9
	HSCL Scope	t	1,73,358	1,73,161	99.9

1	2	3	4	5	6
10.	Structural erection—				
	BSL Scope	t	85,472	81,891	95.8
	HSCL Scope	t	1,89,834	1,78,257	93.9
11.	Eqp. despatches/receipts—				
	USSR	t	1,12,323	1,11,907	99.6
	HEC	t	71,740	68,368	95.3
	MAMC	t	10,521	9,861	93.7
	BHEL & others	t	9,367	8,992	96.0
	Private Sector	t	79,798	67,719	84.9
12.	Mech. eqpt. erection	t	2,51,622	1,91,028	75.9
13.	Electrical works—				
	Electrical erection		38,388.00	28,932.63	75.4
	Electrical network	t	16,699.00	13,341.34	79.9
14.	Pipes—USSR supply	t	20,162	14,064	69.8

TABLE—2

2.5Mt—CONSTRUCTION PROGRESS

Sl. No.	Description	Unit	Total qty.	Cumulative total	Percentage on total
1	2	3	4	5	6
				(As on 31-12-74)	
1.	Excavation	Cu.m.	2,20,175	2,48,543	112.9
2.	Concrete & RCC	,,	55,333	60,795	109.9
3.	Refractories Receipt Indian	t	21,118		
4.	Refractories erection	t	24,922	8,712	35.0
5.	Structurals receipts				
	BSL scope	t	11,352	9,282	81.8
	HSCL scope	t	251	8	3.2
	HEC scope	t	322	280	87.0
6.	Structural erection				
	Tech. structure		1,784	442	24.8
	Bldg. structure		10,141	4,121	40.6

1	2	3	4	5	6
7.	Eqpt. despatches & receipts				
	USSR	t	3,987	9,954	249.7
	HEC	t	5,241	3,888	74.2
	MAMC	t	791	668	84.5
	BHEL & others	t	12,914	1,419	11.0
	Private sector	t	2,229	964	43.2
8.	Mech. eqpt. erection	t	25,510	1,102	4.3
9.	Electrical works				
	Electrical erection		337.11	2.46	0.7
	Electrical network		286.26	00	

S&M/74—4

TABLE—3

4.0 Mt-CONSTRUCTION PROGRESS

Description	Unit	Total qty.	Cumulative total	%-age on total
(1)	(2)	(3)	(4)	(5)
			(As on 31-12-74)	
1. Excavation	Cu.m	55,32,855	22,96,052	41.5
2. Concrete & RCC	Cu.m	8,03,673	1,71,986	21.4
3. UGC	Cu.m	50,000	386	0.8
4. Road		58,500		
5. Permanent tracks		44,750	250	0.6
6. Controlled Fill	Cu.m	21,50,000	11,21,018	52.1
7. Refractories Receipts (Indian)	t	51,467		
8. Refractories erection	t	1,21,657		
9. Structurals receipt				
BSL scope	t	20,000	2,392	12.0
HSCL scope	t	74,741	4,190	5.6
HEC scope	t	17,420	12,669	72.7
10. Structural erection				
Tech. structure	t	26,071	911	3.5
Bldg. structure	t	86,090	1,430	1.7
11. Eqp. despatches & receipts				
USSR	t	13,553	—	—
HEC	t	40,582	9,652	23.8
MAMC	t	6,902	273	4.0
BHEL & others	t	21,394	842	3.9
Private sectors	t	7,029	995	14.2
12. Mech. eqpt. erection	t	1,15,546	219	0.2
13. Electrical works				
Electrical erection		7,700.70	5.00	0.1
Electrical network		589.53	.00	

Process Control Computer

The computerised network planning for construction management introduced in 1970 by installing a second generation computer with tape and disc facilities continued to be used. The use of this computer has also been extended to accounting, inventory control, standardisation of maintenance spares, etc. In order to improve productivity, it has been decided to install a process control computer to control the operation of the blast furnaces and the steel converters. Government have sanctioned the purchase of one IBM—1800 computer system with tele-processing facilities and spares from the IBM World Trade Corporation for this purpose. With the installation of this system, it will be possible to achieve optimisation of metallurgical and production processes.

Slag Granulation

About 1.5 million tonnes of blast furnace slag will be generated annually in the plant in the first stage; with the commissioning of two more blast furnaces in the second stage, slag output would increase to about 2.5 million tonnes. In order to utilise this waste product commercially, it has been proposed by BSL to set up a slag granulation plant at Bokaro with a capacity of 2.3 million tonnes of granulated slag per annum. Granulated slag is a basic raw material in the manufacture of slag cement. This proposal is under consideration of SAIL.

Raw Materials

About nine million tonnes of various raw materials are required by Bokaro steel plant in its first stage. After expansion to four million tonnes, its requirement will go up to about 18 million tonnes, as per details given below :

(in million tonnes)

	Stage I	Stage II
(i) Iron ore	1.24	2.20
(a) Lump	2.93	5.40
(b) Fines	3.40	6.40
(ii) Coal	1.20	2.60
(iii) Limestone	0.44	1.10
(a) BF grade	0.06	0.14
(b) SMS grade	9.27	17.84
(iv) Dolomite		

The progress made in development of sources of raw materials and present position of supply and problems encountered are indicated below :

Iron Ore : The annual requirement of iron ore for Stage-I is 4.17 million tonnes, comprising 1.24 million tonnes of lump ore and 2.93 million tonnes of washed ore fines. The supply was originally planned from Kiriburu mines of N.M.D.C; but as its expansion programme including facilities for washing of fines was expected to be completed only in 1974, alternative arrangement was made for the supply of fines from the Barajamda area. Sized lump ore is being received from Kiriburu. For Stage-II, 7.6 million tonnes of iron ore, comprising 2.2 million tonnes of lump ore and 5.4 million tonnes of ore fines are planned to be supplied by North Kiriburu mines and the Meghahataburu mines which are still to be developed by NMDC. In order to enable free movement of ore rakes from Barajamda to Bokaro, some additional railway facilities, including a diversion line at Rajkharswan, have been taken up by the Railways on priority basis.

Coal : The annual requirement of coal for Stage-I is 3.4 million tonnes and for Stage-II, 6.4 million tonnes. According to initial planning, the plant was to operate on 60% washed medium coking coal from Kargali and 40% washed prime coal from Dugda. However, due to the shortage of medium coking coal, the plant is now operating on washed coals from Dugda, Kargali and Kathara and unwashed prime coal from Jharia. It has also been decided to install a ropeway between Bokaro Steel Plant and the Dugda washery to ensure dependable supply of washed coal.

Limestone : The annual requirements of 1.2 million tonnes of limestone of blast furnace grade for Stage-I is to be met from the mechanised captive mine being developed at Bhavanathpur. At present, the mine is being operated manually. The present production of about 60,000 to 70,000 tonnes per month is meeting the entire requirement of Bokaro Steel Plant and partly of Durgapur Steel Plant. The installation of the crushing and screening plant is in progress. The annual requirement of SMS grade limestone is 443,000 tonnes in Stage-I and 1,100,000 tonnes in Stage-II. The present requirement is being met from Kuteshwar in Madhya Pradesh.

Dolomite : The annual requirement of 56,000 tonnes of dolomite in Stage-I and 1,40,000 tonnes in Stage-II would be met from the captive mine being developed at Tulsidamar near Bhavanathpur. The detailed prospecting is in progress. Some quantity is also being procured from Bhutan.

Personnel

The total number of employees in Bokaro Steel Limited as on 31-12-1974 is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :

	Total	No. belonging to	
		S.C.	S.T.
Class I	2,514	19	20
Class II	854	18	25
Class III	18,443	1,005	522
Class IV (excluding sweepers)	9,194	1,618	1,514
Class IV (sweepers)	790	755	35
Total :	31,795	3,415	2,116

BHARAT REFRACTORIES LIMITED

The undertaking of the Asian Refractory Plant was acquired by the Government of India and its management entrusted to Bokaro Steel Limited. As decided by Government, Bharat Refractories Limited, a company subsidiary to BSL, was incorporated on 22-7-1974 to run the refractory plant.

The refractory plant has produced during April—December, 1974, 1,000 tonnes of bricks and 450 tonnes of mortar per month on an average. The plant is assisting in meeting the urgent requirements of bricks for the steel plant. The licensed capacity of the plant is for manufacture of 24,000 tonnes of bricks per annum. The detailed project report for provision of certain balancing facilities to increase the existing capacity of the plant has been prepared by MECON.

NEW STEEL PLANTS

Salem Steel Plant

The Special Steels Project at Salem (in Tamil Nadu) is being designed for the production of the following :

Sheets and Strips	Tonnes per year
Stainless steel	70,000
Electrical steel	75,000
Other special steels	50,000
Total	195,000

The project is being implemented in two stages. In the first stage, facilities would be set up for the production of 30,000 to 35,000 tonnes of cold rolled stainless steel sheets and strip from imported hot rolled coils followed by the second stage consisting of melting, refining, continuous casting, hot rolling and additional cold rolling facilities required for achieving the full product range indicated above.

A new company by the name of "Salem Steel Limited" was incorporated on 25-10-1972 with an authorised capital of Rs. 100 crores, having its Registered Office at Salem in Tamil Nadu. After the setting up of the Steel Authority of India Limited, Salem Steel Limited has become a wholly-owned subsidiary of SAIL.

The Detailed Project Report was received from M/s. M. N. Dastur & Co., Consulting Engineers, on December 30, 1974 and it is being examined by an Expert Group. Concurrently, the Consulting Engineers are also carrying out Detailed Engineering of the first phase of the project which is expected to be commissioned by the end of the Fifth Plan.

M/s. Hindustan Steelworks Construction Ltd., who have been associated with the preliminary work at the steel plant site have taken up the site preparation work which is progressing satisfactorily.

Out of an estimated 1,521.4 hectares (3,803.52 acres) of land required for the project, 1,474.5 hectares (3,686.22 acres) have already been acquired up to 30-9-1974.

In consultation with the Government of Tamil Nadu, Salem Steel Ltd., are working out details for the provision of water and power supply and development of infrastructure facilities. Meanwhile, work on the construction power and water facilities has been taken up. The Southern Railway have commenced work on the railway siding to the plant area. The road from Salem town to the Steel Plant (Taramangalam Road) is being widened and the Government of Tamil Nadu have commenced work on this road.

Up to the end of December, 1974, an expenditure of about Rs. 7 crores has been incurred on this project.

Vijayanagar and Visakhapatnam Steel Plants

The Public Investment Board has approved the preparation of Detailed Project Reports in respect of these two projects and the Steel Authority of India Ltd. would shortly be appointing Consulting Engineers for the preparation of these reports which are expected to be available in the latter half of 1976.

The principal parameters of the project, viz. capacity, product-mix etc. have already been finalized. Land acquisition and studies for development of infrastructure facilities are progressing satisfactorily in the meantime. Out of an area of 2,312 hectares (5,780 acres) required for the Visakhapatnam Steel Plant site, an area of 2,138 hectares (5,346 acres) or approximately 92% of the plant area has already been acquired. In the case of Vijayanagar Steel Project out of 3,600 hectares (9,000 acres) of land required for the plant proper and slag dump, an area of 2,568 hectares (6,420 acres) has been acquired. Land acquisition for the plant proper in respect of these two projects is expected to be completed during the current financial year.

SAIL have appointed General Managers for the Projects, who are maintaining close liaison with the State Governments on matters connected with land acquisition, rehabilitation of displaced families and development of infrastructure facilities. The proposals drawn up by the State Governments with regard to facilities for water and power supply, approach roads, improvements to communications etc. are under various stages of consideration by SAIL.

On present indications, these plants are expected to be commissioned only towards the end of the Sixth Plan period.

NATIONAL MINERAL DEVELOPMENT CORPORATION LTD.

General

The National Mineral Development Corporation, a subsidiary of SAIL, is entrusted with the development of major iron ore Mines for export as well as for supply to some of the Steel Plants. The mines of the Corporation under operation are Kiriburu and Bailadila-14. The projects in development stage are Donimalai and Bailadila Deposit No. 5. In addition to the iron ore projects, the Corporation is also operating Diamond mines at Panna in Madhya Pradesh. Feasibility studies for exploitation of some other iron ore deposits are also being undertaken.

Finance

The authorised capital of the Company is Rs. 100 crores. The paid-up capital as on the 31st December, 1974 stood at Rs. 82.29 crores. Loans from Government as on that date amounted to Rs. 12.79 crores.*

The Company earned a net profit of Rs. 1.58 crores during the year 1973-74 bringing down the accumulated loss to Rs. 12.25 crores, as on March 31, 1974.

Production & Despatches

Production and despatches during 1973-74 and the period April—December, 1974 are indicated in Appendix IV.

Performance of Projects in Production

Kiriburu.—The work on expansion and modification of the mine originally developed to suit export requirements and subsequently switched over for supplies to Bokaro Steel Plant,

*Provisional.

continued during 1973-74. The Project is supplying iron ore mainly to Bokaro Steel Plant and some quantities to Rourkela Steel Plant. In addition, export of one lakh tonnes of lumps to Japan during the period December, 1974 to March, 1975 has been contracted.

Bailadila-14.—The performance at Bailadila during 1973-74 was lower than planned, mainly due to unusually heavy monsoon, lower availability of plant on account of mechanical interruptions and breakdowns, delay in the completion of fine ore disposal system, and stoppage of work by one of the float ore contractors. Shortfall in despatches was mainly due to non-supply of the required number of rakes by the Railways.

During the period April-December, 1974 plant production was affected by :

(i) strike of workers of the mine in April-May, 1974 ;

(ii) lower availability of plant on account of breakdowns ; and

(iii) unfavourable weather conditions during July—October, 1974.

The production has also been affected due to shortfall in availability of rakes for movement of iron ore to Visakhapatnam.

Panna Diamond Mine.—The production from Majhgawan mine during 1973-74 was the highest achieved so far. During April—December, 1974 cumulative production has exceeded the cumulative target.

Projects under construction

Kiribura Modification and expansion Scheme.—One line under the scheme was commissioned in November, 1973. Construction of the second line has been delayed on account of non-completion of the supplies of Stacker and Reclaimer by the Heavy Engineering Corporation.

Bailadila Iron Ore Project Deposit-5.—The project is designed to produce 4 million tonnes of sized ore per annum for export to Japan. The completion has been delayed due to delay in supply of equipment by HEC and MAMC as also due to technical problems of loose strata encountered in the drivage of the tunnel.

Donimalai Iron Ore Project.—The project is being developed for an annual production of 4 million tonnes of ore. The completion has been behind schedule on account of delays in the procurement of crushers and completion of civil and structural works.

Donimalai Pelletisation Plant.—To use the fines generated at Donimalai, a proposal is under consideration for setting up a Pelletisation Plant with a capacity of 2 million tonnes per annum. Global tenders were invited and opened on the 30th September, 1974. These are under consideration.

Projects under Exploration

Meghahatuburu Project.—Meghahatuburu Deposit is being taken up for meeting the iron ore requirements of Bokaro Steel Plant in the Second stage. The exploratory work and engineering studies for preparation of the Detailed Project Report have been completed. The project report is under preparation.

Feasibility Studies.—For increasing the production of iron ore in the country with a view to meeting the requirements of the proposed steel plants at Vijayanagar and Visakhapatnam, as also for increasing exports, the N.M.D.C. is carrying out investigations in the following iron ore bearing areas :

(i) Ramandrug in Karnataka

(ii) Bailadila-4 in Madhya Pradesh

(iii) Kumaraswamy in Karnataka

(iv) Malangtoli in Orissa

Personnel

The total number of employees in NMDC as on 31-12-1974 is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

	Total	No. belonging to S.C.	S.T.
Class I	406	11	—
Class II	94	2	1
Class III	3,831	236	419
Class IV	2,159	340	751
Total :	6,490	589	1,171

Kudremukh Iron Ore Project

The project was originally conceived for supply of pellet feed to Japan. Marcona Corporation of U.S.A. and MON Group of Japan were assisting NMDC towards the development of this project and the sale of the products. Due to anti-pollution measures in Japan, the scheme for sale of pellet-feed did not materialise. While alternative proposals were under consideration, Iran evinced interest in taking the iron ore from this source. Negotiations for this purpose are in progress with Iran, and are expected to be finalised shortly. When completed, 7.5 million tonnes of iron ore concentrate will be exported to Iran every year from this source.

Transportation—The Committee constituted under the Chairmanship of Shri G. D. Khandelwal, former Chairman of the Railway Board to make recommendations on the transport of raw materials to the Steel Plants and movement of finished products from the Steel Plants has submitted its reports on Durgapur and Alloy Steel Plants, TISCO, IISCO and Rourkela Steel Plants. The Committee is continuing its work in respect of other steel plants. The term of the Commitee has been extended upto the 31st March, 1975. The recommendations of the committee are being examined by the Steel Plants concerned and some of these recommendations have already been implemented.

BOLANI ORES LIMITED

Bolani Ores Limited was formed by the Government of India in collaboration with Orissa Mineral Development Company Limited, for the supply of iron ore to the Durgapur Steel Plant. The company was incorporated in 1957. It started with an authorised and paid-up share capital of Rs. 1 crore which was held by the Government of India and Orissa Mineral Development Company in the ratio of 50.5 and 49.5 respectively. With the formation of the Steel Authority of India Limited as a Holding Company, the shares held by the Government of India in Bolani Ores Limited have been transferred to SAIL. The authorised capital of the Company has also been increased to Rs. 1.5 crores in July, 1973.

At present, the Board of Directors of the Company consists of five Directors including the Chairman. The Chairman and two Directors are the nominees of SAIL and the other two Directors are the nominees of Orissa Mineral Development Company Limited.

The output of the company is meant mainly for feeding the Durgapur Steel Plant and so the production programme is chalked out to conform to the demands of the Durgapur Steel Plant. The Company also produces manganese ore. The production of iron ore and manganese ore during the last three years was as under :—

(In '000 tonnes)

	1971–72	1972–73	1973–74
Iron Ore Lump	1,270	1,166	978
Iron Ore Fines	118	221	205
Manganese Ore	25	20	13

The financial year of the Company is from October to September. The profit made/loss incurred by the Company during the last three years is an under :—

(Rs. in lakhs)

Year ending	Profit/Loss (+)	(—)	
September, 1972	(+)	3.68	
September, 1973	(+)	5.00	
September, 1974	(—)	33.00	(provisional)

In order to meet the demand of special sized iron ore from Durgapur Steel Plant, the Company has taken up an expansion and mechanisation scheme at its mines at Bolani. The total cost of the scheme is estimated at Rs. 4.11 crores. The Company has obtained sanction of term loans to the extent of Rs. 2.75 crores from financial institutions and the State Bank of India. The balance cost will be financed from the Company's own resources. The Company expects that the project will be completed by July, 1975 and the supplies of special sized iron ore will commence soon afterwards.

HINDUSTAN STEELWORKS CONSTRUCTION LIMITED

General

Hindustan Steelworks Construction Limited was incorporated in June, 1964, with the main object of taking up construction of steel plants. In the first instance, the Company had taken up the work of Bokaro Steel Plant construction, site levelling and Stage-I civil and structural engineering works. Subsequently, the Company has also been entrusted with the works of refractory lining, structural and equipment erection and Stage-II civil engineering and structural works. The construction of the township at Bokaro Steel City as well as the works at Bhavanathpur limestone quarry is being done by HSCL.

Other steel plant works include the expansion work of Bhilai Steel Plant, civil and structural works of Salem Steel Limited, civil and structural work of spirally welded Pipe Plant and other structural works at Rourkela Steel Plant, civil engineering and refractory works of coke oven No. VA of Durgapur Steel Plant. The preliminary works in connection with soil testing for the Vijayanagar and Visakhapatanam steel plants have already been completed.

The Company has also undertaken works on various industrial plants outside the steel sector which include work of Bailadila iron ore deposit No. 5, work of smelter complex for Bharat Aluminium Co. Ltd. at Korba, Foundry and Forge shop at Hardwar for BHEL and Transformer factory at Jhansi of BHEL, etc.

1S&M/74—5

Besides the industrial projects mentioned above, the Company has undertaken the construction works of power projects like Korba thermal plant erection, coal handling plant at Faridabad and construction of power house at Nagjhari, coal handling plant at Panki, etc. The Company has been recently awarded with the work of construction of Supa Dam of Mysore Power Corporation, the approximate value of which is Rs. 27 crores. The approach work for the second Hooghly bridge costing Rs. 13 crores is also being done by HSCL.

Finance

The authorised capital of the Company is Rs. 1 crore and its paid-up capital as on 31-12-1974 was Rs. 50 lakhs. The outstanding loans from Government/SAIL upto 31-3-1974 totalled to Rs. 242.50 lakhs and cumulative interest paid on Government loans amounted to Rs. 47.44 lakhs.

The gross capital expenditure incurred by the Company up to 31-3-1974 was Rs. 1,184.48 lakhs and the cumulative depreciation up to the end of 31-3-1974 was Rs. 277.25 lakhs.

The Company's turnover during the year 1973-74 was Rs. 46.94 crores. The net profit before taxation for the year 1973-74 was Rs. 93.89 lakhs which, after provision for tax, amounted to Rs. 35.39 lakhs. The cumulative net profit up to the end of 31-3-1974 was Rs. 565.94 lakhs. Reserves and surplus accumulated up to 31-3-1974 was Rs. 256.78 lakhs.

The Company declared a dividend of 12 per cent for the year 1973-74 as against 20 per cent for the year 1972-73. The reduction in dividend has been made in compliance with the provisions of the Companies (Temporary Restrictions on Dividend) Act, 1974.

Personnel

The total number of employees in HSCL as on 31-12-1974 is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

	Total	No. belonging to S.C.	S.T.
Class I	1,190	14	6
Class II	799	23	10
Class III	4,083	102	14
Class IV (excluding sweepers)	1,695	29	7
Class IV (sweepers)	18	18	Nil
Daily rated workers	13,971	1,942	2,183
Total :	21,756	2,126	2,220

METALLURGICAL AND ENGINEERING CONSULTANTS (INDIA) LIMITED

The authorised capital of the Company, a wholly-owned subsidiary of Steel Authority of India Limited, is Rs. 4 crores. The paid-up capital as on 31st March, 1974 was Rs. 5,000/-. The turn-over during 1973-74, the first year of working, was Rs. 7.023 crores. The Company earned a net profit of Rs. 45.14 lakhs in 1973-74 after providing Rs. 8.56 lakhs for depreciation and Rs. 32.95 lakhs on account of preliminary and development expenses written off.

The main function of the Company is to provide consultancy and engineering services for the development of ferrous and non-ferrous metallurgical enterprises. The major assignments which it has at present are indicated below :

(a) The Company continues as the principal consultant for the expansion of Bokaro Steel Plant from its first stage of 1.7 million to 4.0 million ingot tonnes. The updated Detailed Project Report for this expansion was given in December, 1974.

An agreement has also been signed with Bokaro Steel Limited regarding consultancy, preparation of the Detailed Project Report and detailed engineering services for the 4.75 million ingot tonnes stage of the Plant.

It has also been commissioned to carry out detailed engineering for a 330 MW captive power plant to supply power to Bokaro Steel Limited and the nearby coal washeries of Bharat Coking Coal Limited.

Bokaro Steel Limited has entrusted MECON with the preparation of a Detailed Project Report for the expansion of the Refractory Plant of Bharat Refractories Limited, a subsidiary of Bokaro Steel Limited, from its existing capacity of 24,000 tonnes per year to 40,000/50,000 tonnes per year.

(b) It continues to be associated with a number of new capital schemes and schemes for facilities aimed at optimisation of production at the Steel Plants of Hindustan Steel Limited. These include expansion of Bhilai Steel Plant to a capacity of 4.0 million ingot tonnes, mechanisation of Dalli Mines, setting up a sintering plant and the 8th Coke Oven battery complex at Bhilai, installation of an additional half-coke oven battery at Durgapur and rebuilding of one coke oven battery each at Durgapur and Rourkela Steel Plants. It has also been entrusted with detailed engineering work connected with the setting up of a spirally welded pipe plant at Rourkela.

(c) The Detailed Project Report on the optimisation scheme for the Bhadravati Steel Plant of Mysore Iron and Steel Limited is in progress and is likely to be submitted shortly.

Mysore Iron and Steel Limited has commissioned MECON for a feasibility report for setting up a Wire Rod Mill for the production of 60,000 tonnes of wire rods per year, along with the steel melting and continuous casting units within the existing plant area. The work is in progress. The detailed engineering work on the Forge Shop of MISL is also in progress.

(d) Indian Iron and Steel Company had commissioned MECON to prepare a feasibility report for increasing hot metal production from its existing blast furnaces. The feasibility report for conversion of cold blast cupolas to hot blast cupolas at the Kulti Works of IISCO was submitted in August, 1974. The feasibility report for increasing hot metal production at Burnpur, was submitted in September, 1974.

(e) MECON continues to serve as the Prime Indian consultant to Bharat Aluminium Company Limited for the smelter and fabrication complex of their Korba Aluminium Project.

(f) As part of the long-term steel development programme, MECON has been commissioned by SAIL to prepare feasibility reports for the setting up of two integrated steel plants, one in the Bailadila region in Madhya Pradesh and the other in the Surajgarh region in Maharashtra.

(g) It has been entrusted by Government with the preparation of a feasibility report for a sponge iron steel plant complex for Bangladesh, based on Indian iron ore and locally available natural gas. An interim report was given in September, 1974 and the final report in December, 1974.

(h) The Company has been commissioned by the Government of United Arab Emirates to prepare a feasibility report for setting up a Sponge Iron Steel Plant complex at Dubai. The report has been given in December, 1974. The capacity of the plant will be about 400,000 tonnes of sponge iron and 300,000 tonnes of billets per annum. The plant will be based on Indian Iron ore and local natural gas. The Company has also had discussions about preparing a feasibility report for setting up a similar complex in Abu Dabhi.

(i) The work on the preparation of the techno-economic feasibility report on a pelletisation plant in the Bihar-Orissa area is in progress and the report is likely to be completed in the first quarter of 1975.

(j) It has been appointed as consultants and engineers for the proposed 'Titanium Project' in Kerala by the Kerala Minerals & Metals Limited.

(k) Tamil Nadu Steels, a subsidiary of Tamil Nadu Industrial Development Corporation, have appointed the Company as their consultants for the setting up of a Combination Wire Rod & Bar Mill at their existing arc furnace and continuous casting shop at Arkonam.

(l) It has been retained by the National Coal Development Corporation to advise them on the ways and means of prolonging the life of the existing Battery vis-a-vis the techno-economic feasibility of installing a replacement battery.

(m) MECON has secured in August, 1974 an order for detailed Engineering and Consultancy Services for a Cold Rolling Mill Complex from M/s. Nagarjuna Steel Limited, Hyderabad. This will have a production capacity of 12,000 tonnes of mild steel and medium carbon steel strip per year.

The Company signed an agreement in August, 1974, with Mukand Iron & Steel Works Limited, Bombay, for the manufacture of smaller hot rolling mills in the country, including wire rod mills, merchant mills, light and medium section mills and narrow hot strip mills. MECON has a licence agreement with M/s. Wean United of the USA for the know-how for design and manufacture of all types of rolling mills and ancillary equipment for ferrous and non-ferrous products. Under the new agreement, it will design and sell smaller hot rolling mills, the mechanical equipment for which will be manufactured by Mukand Iron & Steel Works as per MECON's design and detailed drawings.

It has signed a 30-year agreement with Hindustan Steelworks Construction Limited regarding the installation of Benzol Plants in India and abroad. MECON will provide the process know-how, detailed design, consultancy and detailed engineering work, including expert supervision and commissioning. The first major job to be undertaken as per the agreement is the Rs. 10 crore Benzol Plant to be erected at Bokaro Steel Plant.

Personnel

The total number of employees in MECON as on 31-12-1974 is shown in the following table, indicating separately those belonging to Scheduled Castes and Scheduled Tribes :—

	Total	No. belonging to S. C.	No. belonging to S. T.
Class I	1,261	—	—
Class II	40	—	1
Class III	725	11	35
Class IV (excluding sweepers)	227	33	54
Class IV (sweepers)	19	15	4
Total :	2,272	59	94

INDIAN IRON AND STEEL COMPANY LIMITED

The Indian Iron and Steel Company Limited own, in addition to the integrated Steel Plant at Burnpur, an Iron Foundry at Kulti (which is also making spun pipes), captive collieries at Chasnalla, Jitpur and Ramnagore and Iron Ore Mines at Gua and Manoharpur. The Company also has a coal Washery at Chasnalla and ropeway to transport coal from Jitpur to the Washery and from the Washery to Burnpur Works. The Company has a subsidiary, IISCO-Stanton Pipe and Foundry Company Limited at Ujjain (Madhya Pradesh) which has been promoted in collaboration with British Steel Corporation (International) Limited. This Company produces cast iron spun pipes of various dimensions. The rated capacity of the Steel Plant of the Company is 1 million tonnes of ingot steel corresponding to 0.8 million tonnes of saleable steel.

The management of the Company was taken over by the Government of India with effect from the 14th July, 1972 initially for a period of two years, through an Act of Parliament. This was done with a view to arresting the precipitous fall in production of the Steel Plant at Burnpur, to tone up the management and increase production by undertaking the necessary repairs and renovations. Originally, a two year period was considered adequate to improve the technical health of the Plant which had deteriorated owing to neglect of maintenance/replacement and repairs over a long period of time. On actually taking down some of the items of equipment, the condition thereof was found to be worse than anticipated. Taking into account the necessity for carrying out repairs/replacements to restore the capacity of the Plant to its rated level, the need for continuity of control over the management of the Company to safeguard

the substantial investment in the Company by various public sector institutions, and the need to stabilise the improvements made in administration, the period of take-over of the management of the Company has been extended by three years with effect from the 14th July, 1974 through an amending Act of Parliament. Enabling provision has also been made for further continuance of the take-over by a period of five years, if necessary.

During the first two years of the take-over, the management of the Company was through a Custodian appointed by Government. The Custodian was assisted by an Advisory Board. During the extended period, the post of Custodian has been done away with and a full-fledged Board of management has been constituted. The enactment provides for an Administrator to carry out the executive functions of the management.

After the take-over of the management of the Company in 1972, the technical health of the various items of plant and machinery was examined and a Plant Rehabilitation Programme was drawn up. This programme envisages an investment of Rs. 43 crores to restore the capability of the Steel Plant to produce close to the installed capacity within a period of three years. The entire amount has been borrowed as term loans from a consortium of commercial banks/public financial institutions headed by the Industrial Development Bank of India. Up to the end of December, 1974, a total expenditure of Rs. 21.71 crores had been incurred and the total value of orders placed amounted to Rs. 34.53 crores.

The salient features of the Plant Rehabilitatiton Programme are :—

(a) Improvement of raw material handling facilities particularly in relation to coal and iron ore ;

(b) Emergency and hot repairs of Nos. 7, 8 and 9 Coke Oven Batteries and rebuilding of No. 7 Battery ;

(c) Building of a new Ladle House for Blast Furnaces ;

(d) Repairs to open Hearth Furnaces and converters ;

(e) Augmentatiton of steam generation capacity and, thus, of power generation ;

(f) Rehabilitation of handling equipment like cranes and ground chargers ;

(g) Modernising and fully rehabilitating rolling stock ; and

(h) Providing facilities for oil firing.

Apart from the Plant Rehabilitation Scheme, the following two major projects are being taken up for implementation at the Burnpur Steel Plant :—

(a) **Re-building of No. 1 Blast Furnace**

The No. 1 blast furnace which was brought in operation in January, 1973 after its last re-lining was blown out in October, 1974 due to the unsafe condition of the furnace structure. Action has been initiated to re-build and modernise this furnace, the target date for completion being July, 1976. The estimated cost of the work is Rs. 2 crores.

(b) **Renovation of EOT cranes in the rolling mills**

It has become necessary to recondition 30 Nos. of EOT cranes in the Rolling Mills complex. Initially, the first group of 12 cranes will be taken up for which action has been initiated. The estimated cost of reconditioning of the 12 cranes is about Rs. 84 lakhs. These cranes will be reconditioned by January, 1977.

Production

The actual production in the Steel Plant during the past few years has been as under :

(In '000 tonnes)

Year	Steel Ingots	Saleable Steel
1971–72	617	493
1972–73	431	347
1973–74	439	358
1974–75 (Upto December, 1974)	374	290

Though the production during 1973-74 was marginally higher than that of 1972-73, it fell short of the targets for the year. The shortfall was largely due to the run down condition of the plant and equipment. Shortage and frequent interruptions in power supply, particularly during April to June, 1973, disruption in rail movement affecting transport of coking coal and iron ore during November, 1973 to March, 1974 ; strike by contract labour in early January, 1974 and sudden hearth breakout in Blast Furnace No. 3 in October, 1973 also contributed to this shortfall.

During 1974-75, the targets of production are 5,44,000 tonnes of ingot steel and 4,82,000 tonnes of saleable steel. The production of saleable steel during April to December, 1974 has been 87 per cent of the target. The production of ingot steel in December, 1974 has been the highest during any month since the take-over of the management. The production is expected to show slight improvement during the coming months but a major breakthrough in production can be expected only after the completion of the entire plant Rehabilitation Scheme.

After charging depreciation of Rs. 557 lakhs, the loss for the year 1973-74 amounted to Rs. 368 lakhs as compared to a loss of Rs. 576 lakhs for the earlier year. The improved position has been mainly due to higher selling prices of iron and steel products, increases in output from the captive collieries and the better performance of Kulti Works. After charging depreciation of Rs. 475 lakhs, the loss for the period from April to December, 1974 amounted to Rs. 87 lakhs.

MYSORE IRON AND STEEL LIMITED

Mysore Iron and Steel Works which was started in 1923 with a small Blast Furnace to produce about 24,500 tonnes of pig iron annually, was expanded from time to time and it is now one of the main producers of Alloy and Special steels in the country. In addition, it also manufactures Ferro Silicon, Cement, Castings etc

Mysore Iron and Steel Limited was incorporated under the Companies Act, 1956 on the 30th June, 1961 and it commenced business from 1-4-1962. It is a joint undertaking of the Government of Karnataka and the Government of India through the Steel Authority of India Limited. Of the present paid-up capital of Rs. 33 crores of the Company, Rs. 19.8 crores (60 per cent) is held by the Government of Karnataka and the balance of Rs. 13.2 crores (40 per cent) is held by the Government of India through the Steel Authority of India Ltd.

The present installed capacity of the Plant is as under :—

	(tonnes)
Steel Sections (Mild Steel)	48,000
Alloy & Special Steels	72,000
Pig Iron	2,04,000
Slag Cement	96,000
Grey Iron Castings	15,600
Steel Castings	2,500
Ferro-Silicon	20,000
Ferro-Alloys	3,800
Cast Iron Spun Pipes	17,000
Fireclay Refractory Bricks	9,600

Actual Production.—The actual production during 1973-74 and 1974-75 up to the end of December, 1974 and the targets for 1975-76 are as under :

(In tonnes)

Product	Actual Production 1973–74	1974–75 (upto 31.12.74)	Targets for 1975–76
Mild Steel	47,905	34,747	43,000
Special Steels	62,848	36,554	65,000
Steel Ingots	145,187	1,14,078	150,950
Ferro-Silicon	11,790	7,953	7,500
Ferro Alloys	2,903	1,765	2,640
Slag Cement	98,802	74,688	100,000
Pig Iron	148,307	97,832	109, 500
Steel Castings	1,793	1,627	2,000
Grey Iron Castings	13,080	10,010	12,500
Cast Iron Spun Pipes	9,835	6,483	10,000
Cast Iron Plate Sleepers	—	—	—
Refractories	10,243	6,977	10,000
Structures	1,977	1,489	2,500
Calcium Carbide (New Product)	392	79	—
Low Carbon Ferro-Manganese	231	—	—

The production during 1973-74 was affected on account of power cuts ranging from 10 to 25 per cent. During the year 1974-75, the cut has been increased considerably and is ranging from 20 to 60 per cent which is affecting production adversely.

The working results of the Company showed substantial improvement during 1973-74. The company made a profit of Rs. 200.36 lakhs in 1973-74 as against a profit of Rs. 71.17 lakhs

in the year 1972-73. The accumulated loss was reduced from Rs. 8.89 crores as on 31-3-1971 to Rs. 5.43 crores as on 31-3-1974.

The Company is working on a scheme for the installation of a Forge Plant in the Company's works to manufacture certain high speed and high value special steels. The scheme has been approved in principle by the Government of India and the method of financing it is under examination. A detailed project report for this scheme has been prepared by the Metallurgical and Engineering Consultants (India) Limited. The capital cost of the project as per detailed project report and further examination thereof was estimated at Rs. 12.9 crores with a foreign exchange component of Rs. 4.3 crores. This is likely to go up to Rs. 13.45 crores. The scheme is for installation of a forge shop which would process 13,300 tonnes of steel ingots to yield 5,350 tonnes of finished forge products and 2,900 tonnes of Semis to be rolled into 2,230 tonnes of finished rolled products.

The Company is also working on a scheme for installation of certain balancing facilities to optimise production at a total cost of Rs. 11.15 crores. The proposal is now under consideration of Government.

The Company is also planning the establishment of a wire rod mill as a 5th Plan Scheme.

The Company has also under consideration the expansion of the Cement plant and the construction of new Gas holder along with repairs to the existing plant.

STEEL INDUSTRY IN THE PRIVATE SECTOR

TATA IRON AND STEEL COMPANY LIMITED

The Tata Iron and Steel Company Limited own, in addition to the integrated steel plant at Jamshedpur, captive collieries at Sijua and Jamadoba and an Iron ore mine at Noamundi. The Steel Plant at Jamshedpur is the oldest integrated steel plant in the country. The installed capacity of the plant is 2 million tonnes of steel ingots per annum equivalent to 1.5 million tonnes of saleable steel. The capacity was achieved as a result of introduction of modernisation and expansion programmes which were aided by the Government of India and the World Bank through loans. The Plant produces a variety of semi-finished and finished steel items like blooms, billets, tin bars, rails and heavy structurals, plates, sheets etc.

The production in the Plant during the past few years has been as under :—

	Steel Ingots (Figures in million tonnes)	Saleable steel
Capacity	2.000	1.500
1972–73	1.690	1.458
1973–74	1.514	1.200
1974–75 (up to December, 1974)	1.279	1.059

Inadequate receipt of coking coal and seroius power restrictions imposed by D.V.C. seriously affected operations during 1973-74. However, after June, 1974 the situation has improved and consequently production of saleable steel has also improved. In case regular supply of coal and power is maintained, TISCO hope to achieve a saleable steel production of about 1.4 million

tonnes during the current year. Insofar as power supply is concerned, the Company are taking up a scheme for increase in the captive power generation capacity by about 40 MW.

As the Plant is rather old, it is necessary to undertake a continuous programme for replacement, repairs and modernisation in order to maintain its rated capacity. In April, 1974, the Board of Directors sanctioned a capital expenditure programme amounting to Rs. 180.00 crores in the five year period from 1974-75 to 1978-79. The progress in respect of some of the important projects is as under :—

(i) *Coke Oven Rebuilding Programme*

TISCO have drawn up a phased programme of rebuilding the coke oven Batteries. Under the programme, a new battery of 54 coke ovens was commissioned in March, 1973. Rebuilding of two old Batteries, viz. Batteries No. 3 and 1, is in progress and is expected to be completed by the middle of 1975 and the end of 1975 respectively. Shortfalls in receipt of refractories from indigenous sources have seriously delayed the rebuilding programme. The Company propose to rebuild one more Battery in this five year period.

(ii) *Setting up of a new Boiler House*

Under this scheme, ten old Boilers installed in 1928—30 have been replaced by two modern high pressure Boilers with a back pressure turbo generator. The installations have been commissioned.

(iii) *Colliery expansion project*

Under this project, output of washed coal is expected to go up from 1.3 to 1.6 million tonnes per annum. Fines washing facilities are being installed at Jamadoba and West Bokaro Coalfields and new mechanised methods of mining viz. scrapper and longwall are being introduced. Infrastructure for access, winding,

transport and ventilation is being set up for the self-sufficiency phase of 2.8 million tonnes per annum which will be taken up on completion of the present project. The fines washing facilities intended to improve the quality of washed coal have been commissioned. Trials with one of the mechanised methods, viz., scrapper, have begun. Longwall trials are to begin shortly. Various items of equipment like winders, conveyors, etc. are being progressively installed.

With the approval of Government, TISCO have got a feasibility study prepared by M/s. Nippon Steel Corporation of Japan about expansion of the capacity of the Steel Plant from its existing level of 2 million tonnes of ingots a year to 4 million tonnes or more. Nippon Steel Corporation have submitted the feasibility study which is presently under examination by a Steering Committee appointed by Government.

ELECTRIC ARC FURNACE UNITS

Electric arc furnace units for the production of mild steel or alloy and special steel ingots/billets either by the conventional or continuous casting process are popularly referred to as 'mini steel plants'. Ferrous scrap is the principal raw material for these units.

Until a few years back, electric furnaces catered mainly to the demand of the foundries. However, with the recurrence of steel shortage, and industrial 'pick-up' in 1969-70, resulting in a spurt in steel demand, particularly for the re-rolling and engineering industries, there was a boom in the electric furnace industry for steel-making. One of the measures adopted by Government to augment steel production for meeting domestic demand was to allow setting up of small or medium-seized electric furnaces for conversion of scrap which was until then being exported. These units were encouraged particularly on considerations such as smaller investment, shorter gestation period, indigenous availability of equipment and amenability for regional dispersal.

In the past,a number of schemes were approved either for the production of alloy and special steels, or for the production of steel ingots by re-rollers for their own consumption. On December 13, 1966, the setting up of electric furnaces for melting of scrap was delicensed which continued till February, 1970. This, however, was a period of industrial recession and comparatively easy availability of steel. Due to this, not many parties availed themselves of the facility to set up such units during the period. On February 19, 1970, the setting up of electric furnaces was again brought under the purview of industrial licensing. Although the new policy brought back the electric furnace industry within the fold of licensing, units not connected with Larger Industrial Houses, foreign companies and dominant undertakings were nevertheless free to come up without any licence under the Industries (Development and Regulation) Act, 1951, provided the fixed assets did not exceed Rs. 100 lakhs, no import of equipment was involved and production of mild steel only was contemplated. Such units were required only to register themselves with the Iron and Steel Controller. This phase was marked by a phenomenal growth in the electric furnace industry as furnace manufacturing capacity had also been further developed in the country. 88 parties were registered by the Iron and Steel Controller under this policy which was in force up to the 31st October, 1973.

In view of the growing shortage of ferrous scrap, as well as the critical power supply position in certain States, it was considered that, unless some check was exercised on the growth of units with investment up to the ceiling of Rs. 1 crore it may lead to very serious difficulties in regard to vital inputs such as ferrous scrap and power and other items like refractories and graphite electrodes. Against this background, on the 31st October, 1973, Government excluded the electric arc furnace units from the Liberalised Industrial Licensing Policy and, after this date, no electric arc furnace unit can be set up without an industrial licence. Creation of additional capacity in this sphere will now be on a selective basis. However, parties who had taken

effective steps before October 31, 1973 were required to apply for COB (carrying on business) licences which are being considered on merits.

As on the 1st December, 1974, Letters of Intent/COB/Industrial Licences have been granted to 150 parties for setting up electric furnace units mainly for the production of mild steel ingots. In addition, 42 units are registered with the Iron and Steel Controller under the Liberalised Industrial Licensing Policy. In all, 192 units have so far been permitted with an aggregate annual capacity of 41.73 lakh tonnes as indicated below :

	No. of Units		Annual capacity (tonnes)
(i)	Units covered by COB/Industrial Licences	142	31,04,500
(ii)	Units covered by Letters of Intent	8	3,44,000
(iii)	Units registered with Iron and Steel Controller	42	7,24,983
		Total	[41,73,483 tonnes

3 of these units are in the Public Sector and 12 in the Joint Sector.

Out of the 192 electric furnace units covered by registration, Letters of Intent/COB/Industrial Licences, 59 units are reported to have gone into production. Liquid metal production by all electric furnace units during 1974-75 is expected to be about one million tonnes.

The major constraints in the more effective utilisation of the melting capacity available from these furnaces is inadequate availability of ferrous scrap and shortage of electric power. In order to improve on the utilisation of installed capacity, the current import policy provides for import of heavy melting scrap to the extent of 20 per cent of the requirements by actual users.

Besides the capacity primarily for mild steel, there is an installed capacity of about 1,00,000 tonnes in the private sector for alloy and special steels. Messrs Guest, Keen, Williams Ltd., and

Mahindra Ugine Steel Co. are the bigger units in the private sector. Mahindra Ugine Steel Co. are implementing á programme for effecting substantial expansion of their capacity from 36,000 tonnes to 60,000 tonnes per annum. Another important Alloy Steel Plant being set up in the private sector is of M/s. Bihar Alloy Steel Ltd., at Patratu (Bihar) with an annual capacity of 40,000 tonnes. The overall production of tool, alloy and special steel, both in the private and public sectors, during April—December, 1974 (9 months) was 2,55,600* tonnes as compared to 3,24,806 tonnes during 1973-74.

The production of certain categories of low alloy and special steels is expected to go up as Government have, with a view to making better use of facilities already available with the units sanctioned primarily for mild steel, permitted them on the 16th May, 1974, to diversify their production into certain specified categories subject to their obtaining licences under the ISI Certification Mark Scheme. Licences for electric furnace units where the parties are desirous of availing themselves of these facilities, are being suitably endorsed.

The objective is to consolidate the capacity already created in the electric arc furnace industry. The future growth of this industry will be regulated in keeping with the availability of essential inputs.

SPONGE IRON AND PIG IRON

A Working Group on Ferrous Scrap, which was constituted in order to assess the present as well as the projected availability of scrap in the country, had in its Report, submitted in November, 1971, estimated the availability of melting charge for electric furnaces by 1975-76 at 2.18 million tonnes. As already mentioned, the capacity in the electric furnaces industry is likely to be of the order of about 4.17 million tonnes when the schemes already under implementation meterialise. In the context of inadequate availability of ferrous scrap, the development of an

*Provisional.

alternative feed-stock like sponge iron assumes particular significance. For production of sponge iron, iron ore and non-coking coal can be used, both of which are available in abundance in this country. A suitable technology for production of sponge iron based on solid fuels is being developed . Experiments have already been carried out at the National Metallurgical Laboratory, Jamshedpur, using solid fuels and the results are encouraging. In foreign countries, the use of natural gas as reductant has already been established for production of sponge iron on commercial scale.

6 State Industrial Undertakings, which hold Letters of Intent for production of sponge iron aggregating to a capacity of 7,40,000 tonnes, are taking preparatory steps to implement their schemes. Of these, the scheme in Andhra Pradesh for production of 30,000 tonnes of sponge iron per annum by using non-coking coal as reductant is being implemented with UNDP assistance.

No new capacity for pig iron has been sanctioned during 1974-75.

STEEL RE-ROLLING INDUSTRY

The role of steel re-rolling mills is complementary to that of large integrated steel works inasmuch as these further roll steel into bars, rods, wire-rods, twisted/deformed bars, light sections and other profiles to satisfy a very wide range of consumer demand.

From its small beginning, around 1928, as a salvaging industry, the re-rolling industry has undergone a phenomenal growth. It now provides employment to nearly 75,000 persons and accounts for an investment of more than Rs. 80 crores.

Re-rolling mills fall into two categories viz. 'billet-rerollers' and 'scrap rerollers'. The last comprehensive study of the re-rolling industry was made by the Technical Committee on Re-assessment of Rerolling Capacity. In its Report, submitted in

July, 1966, the Technical Committee had assessed the capacity of billet re-rollers at 2.78 million tonnes, of scrap re-rollers at 0.73 million tonnes and other (unassisted) units at 1.20 million tonnes on double shift-basis.

As these mills are being fabricated by several local manufacturers, in the last few years a number of rerolling mills were set up in different parts of the country, both in the small-scale sector as well as under the provisions of the Liberalised Industrial Licensing Policy introduced on February 19, 1970, which removed restrictions on the setting up of units with an investment upto Rs. 1 crore, provided the plant and machinery were procured from indigenous sources and certain other conditions were fulfilled.

The Technical Committee had pointed out early in 1966 that the capacity of the 'billet-rerollers' as well as the 'scrap rerollers' was far in excess of the raw-material available for both, resulting in considerable under-utilisation of capacity in the rerolling industry. Further proliferation of new units, as a result of the relaxations mentioned earlier, threatened to cut deeper into an already meagre availability of raw-materials even for the existing units. To check this, with effect from the 31st October, 1973, the re-rolling industry was also excluded from the purview of the Liberalised Industrial Licensing Policy. New units are not being encouraged. However, the applications of parties who had set up such units or taken effective steps before that date towards implementation of the schemes, are being considered on merits for issue of COB (Carrying on Business) Licences.

WIRE DRAWING INDUSTRY

Over the past few years, the wire-drawing industry in the country has steadily developed both in terms of the number of units as well as in regard to production of finer and sophisticated types of wires.

There are 15 comparatively large units engaged in the manufacture of different types of steel wires. Besides, there are a number of smaller units, 400 of them being in the small-scale sector which manufacture thicker wires, predominently of mild steel.

The setting up of wire-drawing units was also permissible in terms of the relaxations announced under the Liberalised Industrial Licensing Policy in force from the 19th February, 1970 upto the 31st October, 1973 after which this industry was brought under the licensing procedure as adequate capacity had already been created.

The estimated demand for various categories of wires, such as mild steel, low carbon, high carbon and alloy steel wires, by 1980 is about 8,00,000 tonnes. The existing capacity and licensed capacity to be implemented is about 6,00,000 tonnes. In addition, the small-scale sector is reported to have an installed capacity of roughly 8,00,000 tonnes. The production of all categories of wires by the reporting units during April—December, 1974 (9 months) was about 1,53,000 tonnes as compared to 2,30,500 tonnes during 1973-74.

As the availability of wire-rods is inadequate even for the requirements of existing units and as the capacity already created is in excess of demand, creation of new wire-drawing capacity is not being encouraged except for sophisticated items. Most of the requirements of such wires are, however, expected to be met by existing units through diversification within their present licensed capacities.

COLD ROLLED STRIPS AND BOX-STRAPPINGS

Cold Rolling of steel strips is undertaken both in the integrated steel plants and in smaller units. The latter supplement the role of the integrated steel plants as smaller mills are more suitable for rolling strips in narrower widths and thinner gauges and in a variety of tempers according to the end-use.

Cold rolled steel strips find application in a wide range of industries ranging from bicycles, automobiles, industrial boilers and machinery, transformers, radiators and industrial chains to appliances like typewriters, watches, calculators and several other items.

The raw-material for cold rolled steel strips is hot-rolled skelp or strip, the availability of which poses a constraint for increasing production. Domestic production of hot rolled stock is being supplemented by imports. The existing/sanctioned capacity for mild steel cold rolled strips is about 2,66,000 tonnes and for other strips of medium and high carbon and alloy steels is about 81,000 tonnes. This is expected to take care of the estimated demand of 1,96,000 tonnes for mild steel cold rolled strips and of 47,100 tonnes of medium and high carbon and alloy steel cold rolled strips by 1980.

The production of cold rolled steel strip during April—December, 1974 (9 months) was 91,500* tonnes as compared to 1,33,800 tonnes during 1973-74.

Box-strapping and baling hoops are primarily used for packing. Box-strappings are cold-rolled whereas baling hoops are hot-rolled but these can be mostly substituted for each other so far as the end-use is concerned. The demand for these items has, therefore, to be taken together.

The existing/sanctioned capacity for box-strappings and baling hoops is about 64,000 tonnes and is adequate for meeting the estimated demand of 33,600 tonnes by 1980.

The production during April—December, 1974 (9 months) of baling hoops was about 10,500 tonnes and of box-strappings 2,200 tonnes as compared to 5,900 tonnes and 3,100 tonnes respectively during 1973-74.

*Provisional.

FERRO ALLOYS

Ferro-Alloys are essential alloying ingredients for the production of alloy and special steels. The demand for ferro alloys is, therefore, essentialy linked with the pace of growth in the alloy and special steels sector. A review of the ferro-alloys industry was accordingly undertaken, particularly in the context of the growth rate expected in the alloy steel industry. The review revealed that there was no immediate need for creating fresh capacity for the principal ferro-alloys like ferro/silico-manganese, ferro-silicon and ferro/silico-chrome as the capacity already created/planned is adequate for the current requirements and provided the schemes, which are under implementation, materialise, it should be possible to meet the requirements even at the end of the Fifth Plan. Exports of ferro-manganese and ferro-chrome are being permitted, to the extent possible, since the current availability thereof is in excess of internal demand.

A Letter of Intent was granted for a private sector unit to be located at Tumsar (Maharashtra) for the manufacture of 45,000 tonnes per annum of ferro-maganese with the stipulation that initially 100 per cent of its production shall be exported. The scheme is being implemented. Setting up of a new ferro-silicon plant in Andhra Pradesh and of another unit in Karnataka is also in progress.

There are shortfalls with regard to ferro-molybdenum, ferro-tungsten, ferro-titanium and ferro-vanadium the requirements of which are relatively small. These are mainly being met through imports. Letters of Intent have recently been granted for two units to be located in Maharashtra and Orissa for the manufacture of these ferro-alloys.

The Steel Authority of India are processing a scheme for setting up of ferro-vanadium plant at Rairangpur (Orissa) and an investment decision is expected to be taken shortly.

TINPLATE

The Tinplate Company of India, which is the largest producer of tinplate in the private sector, is implementing a scheme for substantial expansion of its capacity from 70,000 tonnes at present to 1,60,000 tonnes per annum. The additional capacity will be in the form of electrolytic tinplate as well as tin-free steel. The import of plant and machinery, as well as the foreign collaboration proposals, for this scheme have been cleared. It is expected that its implementation will result in significant import-substitution, both in regard to tinplate and tin.

RAW MATERIALS

Iron Ore

Iron ore ranks next only to coal among the natural resources of India. According to the Planning Group on Iron Ore for the 5th Plan, the total reserves of iron ore in the country are of the order of 10,536.30 million tonnes, including 8,621.30 million tonnes of hematite and 1,915 million tonnes of magnetite ore. Resource-wise, India ranks seventh, and production-wise ninth, among the iron ore producing countries in the world. While formulating export programmes, the requirements of iron ore for the indigenous steel industry and the overall needs of conservation of raw materials are kept in view.

The production of iron ore in India is organised broadly in three types of mines :—

(i) Captive mines owned and operated by the individual steel plants mainly for their own use ;

(ii) Public Sector mechanised mines owned and operated by the National Mineral Development Corporation (a subsidiary of Steel Authority of India Limited) for exports and for internal use in steel mills ; and

(iii) Smaller mines owned and operated by private parties and based mainly on manual or semi-mechanised methods of mining.

The production of iron ore during 1973-74 and the projections for the 5th Plan are as follows :—

(in million tonnes)

Period	For Exports	For Internal Consumption	Total
1973-74	23.75	11.59	35.34
1978-79	35.50	23.00	58.50

The significant developments affecting iron ore production which have taken place during the last few years are :—

(i) Increasing use of fines for sintering by both Indian and foreign steel plants ;

(ii) Increasing use of pellets instead of lump ore in the export market ; and

(iii) Large scale plans for installation of direct reduction sponge iron plants requiring pellets in countries in West Asia.

To take advantage of the additional market becoming available in West Asia, plans are under consideration for additional mining and setting up of pellet plants. During the current year, considerable headway has been made in finalising arrangements for the development of the Kudremukh magnetite deposits based on Iranian credit for long-term supplies. Proposals for installation of pellet plants in Goa, Donimalai, Bailadila and in Bihar-Orissa area are also being considered.

Iron Ore Board

The Iron Ore Board was constituted as an autonomous organisation in 1973 for the purpose of planning, development, regulation and conservation of iron ore resources in the country. It was registered as a Society under the Societies Registration Act, 1860 on January 20, 1973. The main objects for which the Board has been established are :—

(a) To act as an advisory body in respect of planning and development on all aspects of the development of iron ore deposits in the country ;

(b) To ensure proper regulation, conservation and development of iron ore resources ;

(c) To advise on such steps as may be necessary to promote export of iron ore consistent with resources and indigenous requirements of the iron and steel industry ;

(d) To promote economic utilisation of iron ore resources inclusive of pelletisation of fines, blue dust and of lower grades of iron ore ;

(e) To ensure the coordination of infra-structure facilities for iron ore production and its utilisation in consultation with agencies like railways, ports, State Governments, export organisations and financing institutions ;

(f) To promote equitable distribution of iron ore cargo for shipment from different ports in the interest of port economy and of employment ; and

(g) To study the requirements of research and development for the iron ore sector as a whole.

The Board consists of a Chairman and nine members of whom three are non-official members. The Board is assisted by senior technical officers in specialised fields like geology, metallurgy, economics, etc.

The expenditure on the Board is at present met through grants by the Government of India. Out of a total budget provision for Rs. 35 lakhs for the year 1974-75, Rs. 30 lakhs account for expenditure on various developmental schemes.

During the year, the major activities of the Iron Ore Board related to :—

(i) Planning for integrated development of iron ore sources ;

(ii) Exploration and development ;

(iii) Research ; and

(iv) Economic Studies.

In the field of planning for integrated development, the Board set up two committees for drawing up integrated development plans—one for the Barajamda region of Bihar and Orissa, and the other for the Bellary-Hospet region of Karnataka. The Barajamda Committee report has already been received by the Board. The Board has accepted most of the recommendations of the Committee and has taken steps towards implementation thereof. The report of the other committee is still awaited.

In the field of exploration, the Mineral Exploration Corporation has been entrusted with the exploration of Chiria deposits—the largest single deposit in the Bihar-Orissa area. GSI has taken up exploration of a number of selected iron ore deposits in the Bihar-Orissa region and the Bellary region. Steps have also been taken to further investigate the occurrence of additional reserves in the Goa area.

A study of the relative merits of utilising the processed and agglomerated ores in the production of iron and steel with a view to utilising the large quantities of iron ore fines has been undertaken. An evaluation of the facilities available for testing of iron ore fines in the country has also been taken up.

Manganese Ore

According to the Planning Group on manganese ore, the total estimated *in situ* reserves of manganese are 985.6 lakh tonnes. The *in situ* reserves of high-grade ore are 513 lakh tonnes. In view of the need for conservation of manganese ore resources for indigenous use, a ban has been imposed on the export of high grade manganese ore and appropriate ceilings have been imposed on exports of lower grades.

The production and export of manganese ore has shown a steady decline during the last three years. The figures for the last three years are as under :—

(in lakh tonnes)

Year	Production	Exports
1971	18.4	12.4
1972	16.4	8.6
1973	14.6	6.9

The Manganese Ore (India) Limited (MOIL) is the largest single joint sector undertaking engaged in the mining of manganese ore. It was established in 1962 with a view to taking over 8 of the 9 leases held by a British Company—the Central Provinces Manganese Ore Company Ltd. The new Company was constituted with the following share-holding :—

Government of India	17%
Government of Maharashtra	17%
Government of Madhya Pradesh	17%
Central Provinces Manganese Ore Company Ltd.	49%

The shares held by the Government of India have since been transferred to SAIL.

The performance of the Company had been satisfactory until 1968. From that year onward, due to the slackening of the world market for manganese ore, the financial position of the Company started deteriorating. The failure to achieve the target of steel production during the 4th Plan period also affected the off-take of manganese ore. The figures of production, and stock of manganese ore held by the Company during the last three years have been as under :—

(In lakh tonnes)

Year	Production	Stocks
1971-72	3.53	2.36 as on 31-3-72
1972-73	3.35	2.41 as on 31-3-73
1973-74	2.98	3.01 as on 31-3-74

The financial performance during the same period has been as under :—

		(Rs. in lakhs)
1971-72	Profit	0.51
1972-73	Loss	40.49
1973-74	Loss	49.76

Steps have been taken to improve the performance of the Company. A higher price for manganese ore has been negotiated with the ferro-manganese producers who account for the major part of the off-take of production. Better export prices are also being negotiated with the Minerals & Metals Trading Corporation, the canalising agency for export.

PRODUCTION, PRICES AND DISTRIBUTION

Production and Availability

During the first nine months of the current year (April—December 1974) the total supply of steel to the economy was 4,992,000 tonnes as compared to 3,923,000 tonnes during the corresponding period last year. This represents an increase in availability of steel of a little over a million tonnes or 27 percent.

The details of year-wise production of saleable pig iron, steel ingots, saleable steel, tool & alloy steels and finished steel are indicated at Appendices V to X.

Prices

The main features of the revised pricing policy brought into effect from the 15th October, 1973 were indicated in the Annual Report for 1973-74. During 1974-75 the prices of steel materials and pig iron were revised twice; on the 1st August, 1974 and the 15th September, 1974. The first increase was necessitated by the upward revision of excise duty and Railway freight on saleable iron and steel and the second increase was on account of the increase in Railway freight.

One of the aims of the pricing policy adopted in October, 1973 was to bring down the market premium on steel materials by increasing availability of steel. With the additional production during 1974-75 and speedy movement of steel to the distribution centres, the desired level of supply at the consuming centres has been ensured, as a result of which the open market prices have come down very sharply in all the categories during the

last two to three months. The fall in market premium is as much as Rs. 3,000/- per tonne in certain sizes of plates ; and over Rs. 1500/- per tonne in many categories of structurals and sheets. Several other categories e.g. light structurals, semis, bars and rods do not have any premium at all in the open market at present, when compared with prices announced by the Joint Plant Committee.

Distribution

The distribution policy for steel has been constantly under review. The distribution policy is also intimately connected with the transport patterns, the procedures involved, available channels of distribution and the pricing policy. A composite study was made of all these inter-related aspects and a revised policy effective from the 15th September, 1974 has been introduced. The objectives of this distribution policy are broadly as follows :—

(i) Enabling movement of steel materials in bulk from the Steel Plants in line with the demands of a modern transport system and for optimum utilization of wagon capacity.

(ii) Availability of materials at consuming centres in adequate quantity at all times.

(iii) Elimination of cumbersome procedures for procurement of steel and as a consequence reduction of inventory with the consumers.

(iv) Allocation of steel on priority to defence, engineering exports, power, steel and coal sectors.

The new distribution policy which incorporates the above aims is as follows :—

(a) Large number of consumers will take materials from the producers' stockyards for their convenience and

also to suit the requirements of the transport system wherein material in small quantities cannot be moved easily to various destinations. Only major consumers of steel would indent on the J.P.C. for direct supplies from the Plants. The other consumers who also get SPC allocation will not have to go through the procedure of indenting on JPC and getting sale order issued from the producers, but would directly apply to the SPC for steel from the stockyards. This would also save considerable time.

(b) With a view to obtaining realistic demands, the indenting for the major consumers has been restricted to 120 per cent of their previous SPC allocation. Simultaneously, the earnest money deposit system alongwith indent has been done away with.

(c) The consumers will be assured supply of steel over longer period of time than in the past. Quarterly allocations have been converted to six monthly allocations. Steel fabricating units the requirements of which do not vary very much from period to period will be free to give their annual requirements at the beginning of each financial year instead of applying six-monthly.

The JPC has since issued a "Revised Indenting procedure and Guidelines for SPC Requisition" which *inter-alia* states that annual allocations would be made in favour of steel processing industries manufacturing :

(i) Pipes & Tubes

(ii) Bright Bars

(iii) Wire & Wire Products

(iv) Bolts, Nuts, Rivets and Hinges

(v) Cold Rolled Strips

(vi) Buckets, Drums, Barrels and Containers

(vii) Electrical Stampings

(viii) Steel Furniture

(ix) Expanded Metal

(d) Priority in allocations is being given to defence, engineering exports, power, coal and steel sectors. In making allocations, it is being ensured that these sectors do not suffer for want of steel.

These steps have already resulted in the following :—

(i) The cumbersome paper work in the JPC, Producers' Offices and with the consumers has been substantially reduced.

(ii) Inflated indenting has come down from about 16 million tonnes annually to about 8 million tonnes. It is expected that even this will get further reduced after some time.

(iii) Steel stocks have been quickly moved from Steel Plants to the consuming centres. The stocks of nearly 4 lakh tonnes in the Steel Plants as on the 1st May, 1974 have been reduced to 2,70,000 tonnes as on 1st January, 1975. Simultaneously, all the stockyards are holding adequate stocks which the consumers can draw upon whenever necessary.

The consumers are now getting supplies at reasonably short notice and with the assurance that the materials are available in the nearby stockyards to meet important requirements. The scarcity situation in steel seems to be almost over.

The main producers have also intensified customer contact in order to assess the requirements of customers with greater precision and to supply them with matching items which they need and in time. The production programmes are also being changed as and when necessary to meet these requirements.

Vigilance

The Iron & Steel Controller continues to keep a watch on the proper utilisation of allotted iron and steel materials, through the offices of the six Regional Steel Controllers functioning at Bombay, Calcutta, Delhi, Hyderabad, Kanpur and Madras. During a short period, the Regional Offices have successfully checked malpractices in the steel consuming units. The inspections carried out by the Regional Iron and Steel Controllers are shown below :—

Inspections of:	Total inspections during the period from January 73 to November 1974	Cumulative total from the inception of the Regional Offices till end of the November 1974
Stockyards	78	141
Billet Re-rollers	144	258
Other Units	4,674	5,920
	4,896	6,319

Some Units, particularly of Billet Rerollers and the stockyards of main producers were inspected several times.

As a result of such inspections and surprise raids, supplies of raw materials to as many as 1,430 units were suspended in accordance with the provisions laid down under Clauses

11A/23A of the Iron & Steel (Control) Order during the period from the inception of the Regional Offices till November, 1974. 113 erring units have been debarred under Clause 28B of the Iron & Steel (Control) Order from receiving iron, steel or scrap from any regulated sources for periods ranging from six months to five years. Further, in as many as 339 cases, the concerned sponsoring authorities were advised to take appropriate departmental action against the delinquent units registered under them.

In many cases, the irregularities detected were followed up with reports to the Central Bureau of Investigation/State Police. Of the 160 cases referred to them till the end of November, 1974, 20 cases have so far ended in conviction—3 in Calcutta and 17 in Madras. 15 cases are currently under trial in various Courts. Several cases are in the investigation stage.

IMPORTS AND EXPORTS OF IRON AND STEEL

I-Imports

Introduction

For maintaining industrial growth, import of steel had to be continued during the year as domestic production fell short of requirements. Import was, however, restricted to the minimum, keeping in view the demand and domestic availability. Efforts are also being made for maximising out-put of steel and ferro alloys from installed capacity in the country.

Keeping in view the need for bulk import of steel, the scope of canalisation has been further widened.

Imports during 1973-74 and 1974-75

During 1973-74, the total value of licences issued for import of iron and steel and ferro alloys was Rs. 308.59 crores. Actual import during 1973-74, according to DGCI&S compilation, was, however, for a total value of Rs. 249.49 crores of which Rs. 175.35 crores was for mild steel. These imports as usual, included spill over from ordering against licences issued during the periods prior to 1973-74.

The value of import licences issued during April 1, 1974 to October 30, 1974 was Rs. 196.97 crores. This, however, excludes the value of steel imports allowed against composite licences issued under IDA. Actual import of steel during April to September, 1974 was 5,41,597 tonnes valued at Rs. 166.11 crores against 4,96,914 tonnes valued at Rs. 107.36 crores during April to September, 1973. Of this, import of mild steel accounted for 4,30,919 tonnes valued at Rs. 118.55 crores. These imports also include spill over from the past orders.

Agencies for Imports

The import of steel is being effected by :

(i) actual users under the Actual Users' Import Policy ;

(ii) registered exporters/their nominees/export houses under the Registered Exporters Import Policy ; and

(iii) canalising agencies viz. Hindustan Steel Limited, Minerals and Metals Trading Corporation Limited, and Metal Scrap Trade Corporation Limited. SAIL International Limited has taken over from HSL with effect from 1-1-75, the work of steel import.

In addition, bulk imports are made by HSL for the Steel Bank. Imports by canalising agencies are generally restricted to the canalised items. Sometimes, they are also required to import certain non-canalised items required in bulk, by Government Projects/Departments as well as private sector units. The items of steel and ferro alloys canalised at present are shown in Appendix XI.

International supply position

Until mid 1974, the international steel market experienced scarcity conditions and spiralling prices due mainly to increase in home demand in the exporting countries. During the second half of 1974, however, the internal and international steel prices showed a downward trend. The position of availability of steel in the international market has also since improved.

Import by HSL

During 1974-75, a gap of about 1 million tonnes of steel was anticipated between demand and domestic availability. This gap was required to be filled up by imports. HSL was the canalising agency for most of the canalised categories of steel until 1-1-75. Keeping in view the fact that there was a spill over of about 5,38,000 tonnes from 1973-74 to 1974-75 in actual supplies

against ordering and the difficult international availability position, HSL entered the international market initially for anticipatory buying for the year 1974-75. They were successful in negotiating supply of 5,98,000 tonnes out of which about 4,62,000 tonnes was from Japan, 1 lakh tonnes from East European Countries and the balance from West Europe. Actual delivery from abroad against HSL ordering during April to November, 1974 was about 7,14,000 tonnes. The position of total availability of steel in the country improved considerably on account of these imports.

HSL imports are generally from Rupee Payment Area (RPA) and General Currency Area (GCA). RPA countries are USSR, Poland, Bulgaria, Rumania, Hungary, Czechoslovakia and GDR. Import from RPA has considerably improved during 1974-75.

With a view to ensuring that the Engineering Industries engaged in export production do not suffer for want of steel, a special provision exists in the import policy for supply of imported steel. About 70,000 tonnes have been delivered under the scheme during the current year by HSL. In addition, domestic supplies are arranged on priority basis. A Cell has been created in SAIL to ensure timely supply of steel to export industries against both domestic and import allocation.

Bulk foreign exchange allocations are made for import of steel by the canalising agencies. The table below gives the source-wise foreign exchange allocation and utilisation position in respect of HSL:—

Value Rs. in Crores

Source	Release in 1974—75	Utilisation	Balance	Remarks
GCA	93.40	74.30	19.10	Total release for 1974-75 is Rs. 139 crores in Free Foreign Exchange
RPA	40.00	18.40	21.60	

Import by MMTC

Import of steel by MMTC as a canalising agency in 1974-75, during April to October, 1974 was 24,893 tonnes and the foreign exchange utilisation by them was as follows :—

Rs. in crores

Source	Release	Utilisation	Remarks
Free	21.02	21.01	April to October, 1974
Credit	—	—	

Steel Bank

The Steel Bank continues to cater to the emergent requirements of steel on off-the-shelf basis. The activities of Steel Bank during the year were as below :

April to October, 1974

A. *Sales*

(i)	Stainless Steel Sheets and Plates	— 41.358 tonnes
(ii)	Boiler Quality Plates	— 949.268 „
(iii)	Seamless stainless Steel Tubes & Pipes	— 12.468 „
(iv)	Heat Exchanger Carbon Steel Tubes	— 20.993 „
(v)	Carbon & Stainless Steel Flanges	— 22.286 „
(vi)	Structurals	— 505.248 „

B. *Materials that have arrived during the period April—October*, 1974

(i)	Structurals	— 196.000 tonnes
(ii)	Stainless Steel Sheets & Plates	— 176.56 „
(iii)	Boiler Quality Plates	— 1645.870 „

C Fresh orders placed for importation — 3442.000 „

D. Materials in Transit as on 1-11-1974

(i)	Stainless Steel Sheets & Plates	— 57.627 tonnes
(ii)	Boiler Quality Plates	— 2262.770 „
(iii)	M. S. Plates (Killed)	— 907.350 „
(iv)	Seamless S.S. Tubes & Pipes	— 14.031 „

E. Materials awaiting shipments as on 1-11-1974

(i)	Stainless Steel Sheets & Plates	— 3.584 tonnes
(ii)	M. S. Plates (Killed Qly)	— 62.650 „
(iii)	Boiler Quality Plates	— 1999.700 „
(iv)	Seamless S. S. Tubes & Pipes	— 61.000 „

A statement showing import of various items of steel during 1972-73, 1973-74 and April to September, 1974 is given at Appendix XII.

Metal Scrap Trade Corporation

MSTC is a subsidiary of SAIL. Import of re-rollable scrap in the form of old ships and heavy melting scrap is canalised through MSTC. It is also the canalising agency for export of ferrous scrap. During the year 1974-75 (April—October, 1974) MSTC exported 55,500 tonnes of ferrous scrap and disposed of 5 old ships for scrapping.

II-EXPORTS

Steel Export Policy categorises exportable items into three groups viz. (i) exportable subject to a ceiling; (ii) on merits; and (iii) exports not allowed. The export policy for iron and steel, ferro alloys and ferrous scrap during 1974-75 is given in CCI&E's Public Notice No. 16-ETC(PN)/74 dated 11-4-1974 (Appendix XIII).

During the year, the canalising agency for export of Iron and Steel was changed from HSL to SAIL International Limited, a fully owned subsidiary of SAIL, set up in June, 1974.

Export of Iron and Steel

Total export of iron and steel during 1973-74 and April—December, 1974 was as below :—

	Quantity in tonnes	Value in Rs. crores
1973-74	467,453	20.21
1974-75 (April-December)	74,564	3.31

Category-wise exports of iron and steel during 1973-74 and 1974-75 (April—December) are given at Appendix XIV.

Export of Ferrous Scrap

Keeping in view the scarcity conditions and the need for better utilisation of domestic furnace capacity, the export of ferrous scrap during 1974-75 has been restricted to what cannot be used within the country. The following table gives the export of ferrous scrap during 1973-74 and 1974-75 (April—September):

	Quantity in tonnes	Value in Rs. Lakhs
1973-74	111,666	290.74
1974-75 (April-September)	44,018	205.28

Category-wise export of ferrous scrap during 1973-74, 1974-75 (April—September) is given at Appendix XV.

Export of Ferro Alloys

The main items of ferro-alloy exports are ferro-manganese, ferro-manganese slag, ferro chrome, silico chrome and ferro silicon.

Category-wise export of ferro alloys during 1973-74 and 1974-75 (April—September) are given at Appendix XVI.

APPENDIX I

LIST OF SUBJECTS ALLOCATED TO THE DEPARTMENT OF STEEL

1. Steel Plants in the public and private sectors, the re-rolling industry and ferro-alloys including all future development.

2. Development of iron ore mines in the public sector.

3. Development of other ore mines and coal washeries and mineral processing for the steel plants.

4. Production, distribution, prices, imports and exports of iron and steel and ferro-alloys.

5. Planning, development and control of, and assistance to, all iron and steel industries.

6. Production, supply, pricing and distribution of iron ore, manganese ore, limestone, sillimanite, kyanite and other minerals and alloys used in the steel industry, excluding grant of mining leases or matters connected therewith.

7. The Steel Authority of India Limited and its subsidiaries.

8. Matters relating to the following undertakings namely:—
   (i) The Mysore Iron and Steel Ltd.
   (ii) The Bolani Ores (India) Ltd.
   (iii) The Manganese Ore (India) Ltd.
   (iv) The Metal Scrap Trade Corporation.

9. Other Public Sector Enterprises or undertakings falling under the subjects included in this list except such as are specifically allotted to any other Department.

10. All Attached or Subordinate Offices or other organisations concerned with any of the subjects specified in this list.

APPENDIX—II

Demand and Availability of Finished Mild Steel (As per present estimates)

(In '000 tonnes)

	FIFTH PLAN				
	1974-75	1975-76	1976-77	1977-78	1978-79
1. Demand (Domestic) . .	7,294	7,973	8,882	9,707	10,723
2. Capacity planned in integrated steel plants .	6,729	8,093	9,949	11,134	11,134
3. Estimated production					
(i) Steel Plants .	5,190	6,470	7,260	7,850	8,840
(ii) Electric Arc Furnaces .	630	840	910	1,000	1,050
Total : . .	5,820	7,310	8,170	8,850	9,890

Assumptions

1. Estimates of Domestic demand are based on the assessment made by a Planning Group set up in connection with the formulation of Fifth Plan.
2. Estimated production is based on the assessment made by SAIL.
3. Commissioning schedule of additional steel capacity:

Bhilai	4.00 M.t.	1977-78
Bokaro	1.7 M.t.	1975-76
Bokaro	4.0 M.t.	1976-77

APPENDIX—III

Estimates of demand and availability of Alloy and Special Steels during the Fifth Plan period

(In '000 tonnes)

	1974-75	1975-76	1976-77	1977-78	1978-79
Demand . .	363	398	496	478	534
Availability					
(a) Mini-steel Plants	140	240	290	310	344
(b) Alloy steel Plants	240	260	270	280	290
(c) Main Plants .	30	30	20	10	—
Total . .	410	530	580	600	630
Surplus . .	47	132	144	122	106

APPENDIX—IV

Production and despatches by the National Mineral Development Corporation Ltd., during 1973-74 and April—December, 1974

(In '000 tonnes)

Sl. No.	Particulars	1973-74	Performance 1974-75 (April-December, 1974)
1.	**Production**		
	Bailadila-14		
	Kiriburu	4,335	2,694
2.	**Despatches**	698	902
	Bailadila-14		
	Kiriburu	4,014	2,515
3.	**Export/Shipments**	757	1,033
	Bailadila-14		
	Kiriburu	4,082	2,369
		107	..

DIAMOND MINING PROJECT, PANNA

(In carats)

Production		
1. Majhgawan	17,905.98	12,703.48
2. Ramkheria	1,612.80	1,579.98
Total	19,518.78	14,283.46

APPENDIX—V

PRODUCTION OF SALEABLE PIG IRON

(In '000 tonnes)

Year	Bhilai	Durgapur	Rourkela	TISCO	IISCO	Total (1—5).	MISL	Bokaro	Others	Grand Total
1963-64	407	418	98	0	203	1,132	..	..	31	1,163
1964-65	349	385	79	23	207	1,043	..	..	42	1,085
1965-66	509	336	68	18	219	1,150	..	..	26	1,176
1966-67	550	201	59	3	172	985	..	..	28	1,013
1967-68	656	278	64	1	197	1,196	..	..	22	1,218
1968-69	591	375	147	2	346	1,461	13	..	31	1,505
1969-70	649	376	113	1	322	1,461	4	..	74	1,539
1970-71	554	330	96	1	253	1,234	30	..	56	1,320
1971-72	476	269	127	2	211	1,085	54	..	91	1,230
1972-73	550	279	70	2	72	973	41	308	93	1,415
1973-74	506	100	46	3	141	796	33	664	96	1,589
1974-75 (Upto Dec.'74)	392	83	67	1	105	648	9	423	79	1,159

APPENDIX—VI

PRODUCTION OF STEEL INGOTS

(in '000 tonnes)

Year	Bhilai	Durgapur	Rourkela	Bokaro	TISCO	IISCO	Total (1—6)	MISL	Others	Grand Total
1962-63	1,060	731	700	..	1,799	1,002	5,292	46	57	5,395
1963-64	1,143	972	800	..	1,892	1,027	5,834	48	63	5,945
1964-65	1,131	1,006	979	..	1,956	950	6,022	47	69	6,138
1965-66	1,371	1,001	1,065	..	1,979	970	6,386	69	72	6,527
1966-67	1,852	754	943	..	2,001	897	6,447	75	75	6,587
1967-68	1,785	738	924	..	1,933	791	6,171	91	70	6,332
1968-69	1,735	823	1,162	..	1,816	777	6,313	120	73	6,506
1969-70	1,876	818	1,104	..	1,708	700	6,206	136	92	6,434
1970-71	1,940	634	1,038	..	1,715	627	5,954	91	94	6,139
1971-72	1,953	700	823	..	1,708	617	5,801	133	364	6,300
1972-73	2,108	723	1,177	..	1,690	431	6,129	155	696	6,980
1973-74	1,894	776	1,081	18	1,484	439	5,692	156	766	6,614
1974-75 (Upto Dec' 74)	1,450	592	754	79	1,271	374	4,500	114	596	5,210

APPENDIX—VII

PRODUCTION OF SALEABLE STEEL BY MAIN PRODUCERS

(In '000 tonnes)

Year	Bhilai	Durgapur	Rourkela	TISCO	IISCO	Total
1962-63	803	486	421	1,413	795	3,918
1963-64	884	731	566	1,507	810	4,498
1964-65	916	721	689	1,568	755	4,649
1965-66	1,028	684	782	1,568	723	4,785
1966-67	1,328	550	683	1,568	709	4,838
1967-68	1,252	527	640	1,534	613	4,566
1968-69	1,344	500	773	1,465	640	4,722
1969-70	1,496	494	796	1,440	568	4,794
1970-71	1,549	413	683	1,375	523	4,543
1971-72	1,568	432	598	1,387	493	4,478
1972-73	1,744	477	765	1,456	351	4,79 3
1973-74	1,682	374	741	1,200	360	4,357
1974-75 (Up to Dec' 74)	1,238	387	567	1,059	290	3,541

APPENDIX VIII

PRODUCTION OF TOOL, ALLOY AND SPECIAL STEELS

(in '000 tonnes)

Producers	1969-70	1970-71	1971-72	1972-73	1973-74	*1974-75 (upto Dec.'74.)
1. Canara Workshops Ltd., Mysore	2,163	3,801	2,834	2,090	1,852	1,314
2. Firth Sterling Steel Co. of India Ltd., Maharashtra	533	921	985	944	1,839	1,385
3. Globe Steel (P) Ltd., Haryana	..	7,816	4,306	12,866	11,296	3,802
4. Guest Keen Williams Ltd., West Bengal	24,619	29,686	35,095	38,000	38,056	22,314
5. Alloy Steel Project, Durgapur	41,189	38,621	35,006	35,835	36,746	32,037
6. Hindustan Steel Ltd. (Bhilai & Rourkela Steel Plants.)	37,383	113,964	94,530	83,683	53,966	33,705
7. Indian Iron & Steel Co., West Bengal	1,664	Nil	Nil	N.A.	N.A.	N.A.
8. Lasco Steel Ltd. Madras	..	..	85	Nil	N.A.	N.A.
9. Mahindra Ugine Steel Co. Ltd., Maharashtra	19,679	28,174	32,561	28,391	26,859	21,189
10. Mysore Iron & Steel Ltd. Mysore.	46,362	48,527	52,052	45,275	62,842	36,554
11. Singh Engg. Works Ltd., U.P.	..	467	Nil	N.A.	N.A.	N.A.
12. Tata Iron & Steel Co. Ltd., Bihar	66,926	1,32,308	1,73,698	1,76,071	71,145	82,717
13. J.K. Iron & Steel Co. Ltd., Kanpur		67	78	12	N.A.	N.A.
14. Krishna Steel Industries (P) Ltd., Bombay	..	Nil	Nil	Nil	N.A.	N.A.
15. Mukand Iron & Steel Works Ltd., Bombay	19,318	5,241	2,939	3,848	5,808	6,105
16. The National Iron & Steel Co. Ltd., Calcutta	1,225	657	159	269	908	224
17. Textool Co. Ltd., Coimbatore	..	63	395	398	570	395
18. Himmat Steel Foundry (M.P.)			1,769	Nil	N.A.	N.A.
19. Upper India Steel, Punjab			2,043	5,169	12,919	7,555
20. Partap Steel Rolling Mills Haryana					14,282	8,853
TOTAL	2,61,061	4,10,918	4,38,535	4,32,851	3,39,088	2,58,149

*Provisional.

APPENDIX IX

PRODUCTION OF FINISHED STEEL—PRODUCER-WISE

(In '000 tonnes).

Year	Bhilai	Durgapur	Rourkela	TISCO	IISCO	Total (1—5)	MISL	Others	Grand Total
	1	2	3	4	5	6	7	8	9
1962-63 . . .	555	234	427	977	632	2,882	39	1,000	3,864
1963-64 . . .	658	374	527	1,035	652	3,246	41	1,009	4,296
1964-65 . . .	654	493	626	1,108	637	3,518	39	876	4,433
1965-66 . . .	726	511	717	1,084	623	3,661	49	800	4,510
1966-67 . . .	722	391	638	1,062	576	3,389	60	1,042	4,491
1967-68 . . .	690	342	602	1,002	451	3,087	70	896	4,053
1968-69 . . .	903	383	738	1,048	512	3,584	77	1,241	4,902
1969-70 . . .	1,134	395	758	1,002	460	3,749	40	1,259	5,048
1970-71 . . .	1,215	337	593	983	464	3,592	24	1,272	4,888
1971-72 . . .	1,030	337	561	1,002	449	3,379	44	1,538	4,961
1972-73 . . .	1,537	359	715	917	293	3,821	54	1,638	5,513
1973-74 . . .	1,372	271	741	852	328	3,564	48	1,277	4,889
1974-75* (Upto Dec. '74) .	947	311	529	756	240	2,783	59	735	3,577

*Provisional.

APPENDIX X

PRODUCTION OF FINISHED STEEL—CATEGORY-WISE

(Figures in '000 tonnes)

Category	1970-71	1971-72	1972-73	1973-74	1974-75 upto December 1974*
1	2	3	4	5	6
A. Mild Steel					
Light & Med. Structurals .	641.7	512.0	628.1	423.1	332.5
Heavy Structurals	238.3	192.9	207.1	142.9	117.1
Heavy Rails					
(i) 1st Class .	243.7	259.7	269.2	204.0	157.7
(ii) 2nd Class .	145.4	109.6	53.5	50.6	30.5
Light Rails .	5.5	6.4	3.9	8.8	7.7
Black Sheet (Corr.)	..	0.7	0.3	..	..
Black Sheet (Plain)					
(i) Hot Rolled .	212.4	219.1	194.1	167.9	141.6
(ii) Cold Rolled	85.2	96.1	96.2	95.4	57.6
G.P. Sheets .	72.9	57.7	70.6	70.7	53.0
G.C. Sheets .	117.2	108.9	92.9	89.6	60.1
Plates .	271.4	274.9	310.3	276.6	233.2
Bars . . .	1,055.7	1,153.8	1,391.7	1,465.2	1,004.9
Rods . . .	517.6	562.8	708.6	605.2	395.4
Wires.					
(i) Black .	48.5	81.2	98.3	100.8	72.0
(ii) Galvd. .	34.8	52.1	58.8	44.5	21.0
(iii) Others .	52.3	90.9	84.2	85.2	60.0

*Provisional.

1	2	3	4	5	6
Hoops . .	6.6	8.2	8.2	5.9	10.5
Strips :—(i) Hot Rolled .	91.6	105.6	175.9	163.8	82.8
(ii) Cold Rolled	100.1	102.5	100.5	133.8	91.5
Box Strappings .	6.7	5.1	3.0	3.1	2.2
Steel Sleepers .	58.8	67.7	55.9	51.8	48.3
Tinplates . .	133.4	114.5	115.6	87.4	59.1
Skelp . .	242.6	232.7	244.0	194.4	176.4
Wheel, Tyres & Axles . .	37.5	32.0	30.4	22.8	22.9
Special Sections .	57.5	75.4	79.2	56.7	27.0
Total Mild Steel	4,477.4	4,522.5	5,080.5	4,550.2	3,265.0
B. Total Alloy & Special Steel .	410.9	438.5	432.9	339.1	255.6
GRAND TOTAL (A+B)	4,888.3	4,961.0	5,513.4	4,889.3	3,520.6

APPENDIX XI

Iron and Steel and ferro-alloy items

Item	Canalising agency
(1) Ferro-Molybdenum	MMTC/All Integrated Steel Plants
(2) Ferro-Tungsten	
(3) Ferro-Vanadium	
(4) Ferro Phosphorous	
(5) Ferro Silinium	
(6) Ferro Cobalt	
(7) Ferro Nickel	
(8) Ferro Aluminium and Silico Aluminium	
(9) Ferro Silico Zirconium	
(10) Ferro Boron (including stablished Ferro Boron with Aluminium and Titanium like Grainal or Batsally)	
(11) Ferro Columbium (Niobium)	
(12) Ferro Chrome (containing 0.03% or less carbon or Nitrogen bearing).	
(13) Ferro Manganese (containing less than 0.05% carbon).	
(14) Ferro Titanium (containing less than 1% Aluminium)	
(15) Ferro alloys in powder form (except ferro-titanium) for welding industry only	
(16) Ferro-Zirconium	
All mild steel, high carbon steel (other than stainless steel) wire rods in coils	Hindustan Steel Limited.

All mild steel, medium high carbon steel semis, including ingots, blooms, slabs, billets, and heavy rounds above 160 mm.	MMTC
Stainless steel sheets, plates and strips in cut length or in coils.	MMTC
All electrical steel sheets, strips other than cold rolled grain oriented, whether in cut lengths or in coils	Hindustan Steel Limited.
Cold rolled grain oriented electrical steel sheets, strips either in cut lengths or in coils.	MMTC
All mild and special steel sheets, strips and skelp in both hot rolled and cold rolled either in cut length or in coils.	Hindustan Steel Limited.
All G.P. Sheets and strips either in cut lengths or in coils.	Hindustan Steel Limited.
All mild steel and special steel plates including ship building quality, boiler quality and chequered plates, whether in cut length or in coils.	Hindustan Steel Limited
Ship building quality sections, M.S. sections including angles, channels, joists, beams, tees, flats, hoist, rounds, bars, rods, high tensile angles, channels, joists, beams, tees and plates	Hindustan Steel Limited
All prime tin plates including open top sanitary can quality.	Hindustan Steel Limited.
Tin free steel.	Hindustan Steel Limited.
Heavy melting scrap.	Metal Scrap Trading Corporation
Re-rollable scrap in the form of old ships for dismantling.	Metal Scrap Trading Corporation.

APPENDIX XII

Imports of Iron and Steel

	1972-73	1973-74	1974-75 April-September
A—Quantity in tonnes			
1. Pig Iron, Sponge Iron, etc.	571	697	433
2. Ferro Alloys	1,618	366	728
3. Cast Iron	1,180	2,091	1,535
4. Mild Steel	9,64,096	8,48,381	4,30,919
5. High Carbon Steel	1,96,457	93,655	71,066
6. Alloy Steel	58,837	79,515	30,105
7. Steel Castings and Forgings	6,271	6,539	3,180
8. Iron & Steel Scrap	8,053	24,710	3,631
TOTAL	12,37,083	10,55,954	5,41,597
B—Value in Rupees lakhs			
1. Pig Iron, Sponge Iron etc.	12	15	11
2. Ferro Alloys	73	26	30
3. Cast Iron	84	187	133
4. Mild Steel	15,028	17,535	11,855
5. High Carbon Steel	3,110	2,035	1,882
6. Alloy Steel	3,148	4,173	2,339
7. Steel Castings & Forgings	476	688	293
8. Iron & Steel Scrap	80	290	68
TOTAL	22,011	24,949	16,611

SOURCE :—DGCIS data re-arranged.

APPENDIX XIII

(To be published in Part I, Section I, of the Gazette of India Extraordinary, dated the 11th April, 1974)

GOVERNMENT OF INDIA

MINISTRY OF COMMERCE

New Delhi, the 11th April, 1974

EXPORT TRADE CONTROL

PUBLIC NOTICE NO. 16-ETC(PN)/74

Subject :—Export of Iron and Steel and Ferro Alloys and Ferrous Scrap-Policy for the licensing period April, 1974—March, 1975.

It has been decided that export policy for Iron & Steel, Ferro Alloy and Ferrous Scrap for the licensing period April, 1974—March, 1975 will be as in the enclosed statement (Annexure).

Sd/-(S. G. Bose Mullick)

Chief Controller of Imports and Exports

ANNEXURE TO PUBLIC NOTICE NO. 16-ETC(PN)/74

Export Policly in respect of S. No. 9(ii)of Schedule I Part 'B' to the Export (Control) Order, 1968, i.e. Iron and Steel other than Cast Iron Pipes and Fittings for the year April, 1974—March, 1975.

S. No. as in Part 'B' of Schedule I to the E(C) O, 1968	Name of the commodity as in Part 'B' of Schedule I	Licensing Period April' 74 March' 75	Licensing Policy	Remark
1	2	3	4	5
9.	Metals, the following :			
	(ii) Iron & Steel other than cast iron pipes and fittings :—			
	(a) 1. Slabs			
	2. Blooms			
	3. Plates			
	4. Tinplate prime secondary waste/waste			
	5. Chequered Plates			
	6. Skelp			
	7. G.P. Sheets			
	8. C.R. Sheets & Coils	Not allowed		
	9. H.R. Sheets & Coils			
	10. Wheels and Tyres			
	11. Axles			
	12. Sleeper (Pressed)			
	13. Steel Wires other than M.S. Wires, (P.C. Wires and A.C.S.R. Wires)			
	14. Wire Rods other than mild steel wire rods			
	15. Alloy Constructional Steels			
	16. Electric Steel Sheets Dynamo Grade			

1	2	3	4	5
(b)	1. Pig Iron (Basic & Foundry Grade) 2. Ingots 3. Billets 4. Heavy and Medium Structurals 5. Rails 6. G.C. Sheets		On Merits (Export licences will be issued to Main Producers only).	
	7. Mild steel bars and rods including wire rods (other than those mentioned in Schedule 'B' Appendix 41 Import Trade Control Policy 1974-75), Cold twisted bars and light structurals rolled by re-rolers.		'On Merits' (Export canalised through SAIL International Ltd.)	
	8. M.S. Wires coated/uncoated 16 SWG and thicker 9. P.C. and ACSR Wires		'ON Merits' (Export canalised through SAIL International Ltd.)	
	10. All other items.		'On Merits'.	
(c)	Ferrous Scrap			
	1. (a) Mill Scale Scrap (b) Iron Skull Scrap (c) Broken Discarded Chilled Rolls.	Export Allowed	Export canalised through MSTC	
	2. Export of Ferrous Scrap of categories, other than those specified above.		Export not allowed	
	18. Ferro Alloys			
	(i) Ferro Manganese (other than Ferro Manganese containing less than 0.05% carbon)	Allowed with a limited ceiling	Canalised through M.M.T.C.	
	(ii) Ferro Manganese slag			
	(iii) Ferro Silicon			
	(iv) Ferro Chrome (other than Ferro Chrome containing less than 0.03% carbon and Nitrogen bearing Ferro-Chorme)/Silico Chrome.			

APPENDIX XIV

EXPORTS OF PIG IRON & STEEL

I. Quantity in tonnes	1972-73	1973-74	1974-75 (April-December)
Categories			
A—Pig Iron	4,06,715	4,30,801	72,221
B—Steel			
Rounds/Plates/Bars and Rods	54,519	6,667	1,057
Structurals	53,066	3,386	1,286
Rails	10,338	24,947	—
Billets	—	—	—
Ingots	—	—	—
Sheets	2,899	1,652	—
TOTAL (B)	70,822	36,652	2,343
TOTAL (A+B)	4,77,537	4,67,453	74,564
II. FOB Value in Rupees lakhs			
A—Pig Iron	1,323.23	1,559.23	272.13
B—Steel			
Rounds/Plates/Bars & Rods	40.60	112.03	29.34
Structurals	493.21	48.81	29.72
Rails	74.89	265.00	—
Billets	—	—	—
Ingots	—	—	—
Sheets	36.46	36.16	—
TOTAL (B)	645.16	462.00	59.06
TOTAL (A)+(B)	19,68.39	20,21.23	331.19

SOURCE :—Steel Exporters' Association.

APPENDIX XV

EXPORT OF IRON AND STEEL SCRAP

Quantity in tonnes and Value in Rs. lakhs

	1972-73		1973-74		1974-75 (April-September)	
	Quantity	Value	Quantity	Value	Quantity	Value
Iron and Steel Scrap for re-melting reforging	22,707	43.44	33,074	41.29	21,812	37.88
Filling etc.	—	—	—	—	—	—
Wornount articles	52,888	81.14	74,810	245.13	22,206	167.39
Others						
SUB TOTAL	75,595	124.58	107,884	286.42	44,018	205.27
Iron and Steel Scrap used as Prime Varieties						
Bars ends etc.	—	—	—	—	—	—
Sheet Cuttings (Uncoated)	—	—	—	—	—	—
Sheet Cuttings (Coated)	—	—	—	—	—	—
Other Remnants	2,943	3.51	3,782	4.32	—	1
SUB TOTAL	2,943	3.51	3,782	4.32	—	1
TOTAL	78,538	128.09	111,666	290.74	44,018	205.28

Source : Dervied from the monthly statistics of Foreign Trade of India issued by DGCIS.

APPENDIX XVI

***Category-wise export of Ferro alloys* (Quantity in tonnes & Value in Rs. lakhs)**

Category	1972-73		1973-74		1974-75 (April-September)	
	Quantity	Value	Quantity	Value	Quantity	Value
Ferro-Manganese below 3 % carbon	2,461	24.03	6,200	68.36	12,381	200.21
Ferro-Manganese over 3 % carbon	72,669	630.99	20,372	240.08	8,726	158.75
Ferro Chorme	2	0.12	2,319	76.81	1,866	43.41
Ferro Silicon	2.025	15.39	1,975	36.97	—	—
Others	69	0.80	—	—	—	—
	77,226	671.33	31,366	422.22	22,913	402.37

SOURCE :—Monthly Statistics of Foreign Trade of India issued by DGCIS.

MGIPRRND—1 M of S & M/74—Sec. VIII—15-3-75—2,700