



उत्तराधिकार के लिए
संशोधित और जारी किया गया है

For Reference
Updated and for issue

REPORT

1980-81

GOVERNMENT OF INDIA
MINISTRY OF STEEL & MINES
(Department of Steel)
NEW DELHI

केवल संदर्भ के लिए For Reference only
जारी न करने के लिए Not for issue

REPORT

1980-1981



GOVERNMENT OF INDIA

MINISTRY OF STEEL & MINES

DEPARTMENT OF STEEL

केवल संदर्भ के लिए For Reference only
जारी न करने के लिए NOT FOR ISSUE

REPORT

1980-1981



GOVERNMENT OF INDIA

MINISTRY OF STEEL & MINES

DEPARTMENT OF STEEL

संस्कृत-भाषा-विभाग
संस्कृत-भाषा-विभाग

1981-0791

1981-0791



GOVERNMENT OF INDIA

संस्कृत-भाषा-विभाग

PRINTED BY THE MANAGER, GOVERNMENT OF INDIA PRESS, FARIDABAD, 1981

PREFACE

This Report is divided into two parts.

Part I presents an overall picture of the Department of Steel highlighting, *inter alia*, the strategy adopted for the development of steel and ferrous metallurgy.

Part II covers the activities and the performance of the organisations/undertakings under the Department of Steel during the Year.

ANNUAL REPORT
ERRATA

S. No.	Para Page	Line	For	Read
1.	24 . Item (x)	3	minimum	minimal
2.	24 . Item (xii)	3		delete 'of'
3.	26 . Item 1·1·3·2		1 0 00	10·00
4.	27 . Item 1·13		Steel	Steelworks
5.	31 .	10		delete 'MT'
6.	32 . Para 2·2·7	2		put, after SSICs
7.	35 .	9	509·955	509,955
8.	39 . Para 3·1·7		read 'Ingot	Steel' as Central
				Heading.
9.	39 . Para 3·1·8	16		delete/after
				interruptions
10.	50 . Heading		Ccrap	Scrap
	before 3·1·30			
11.	53 . Para 3·2·5	2	varies	varied
12.	54 . Para 3·2·9	2		delete 'of'
13.	67 . Para 3·7·14	2	1981	1980
14.	69	2	inestigation	investigation
15.	83 Para 4·3·1	6	1·000	1,000
16.	84 . Para 4·3·2	3	Governmen	Government
17.	85 . Para 4·4·2	8	darwing	drawing
18.	86 . Para 4·5·1	10	63·3	63·2
19.	91 : Para 5·2·2	12	producers	producers
20.	93 . Para 5·4·5	3		read) after
				Technology
21.	97 . Second Table	against item	+-	—
		6 last column		
22.	101 . —	—	10,670	10,668
23.	101 . —	—	12·240	12·020
24.	101 . —	—	50,661	50,659
25.	101 . —	—	118·319	118·099

CONTENTS

PART—I

DEPARTMENT OF STEEL

	PAGE
Chapter I—Main functions and Organisational Structure	1
Chapter II—Survey of Important Developments during the year-Problems and Prospects	4

APPENDICES

Appendix IA—Subjects allocated to the Department	12
Appendix IB—Inspections by Iron & Steel Control Organi- sation	14
Appendix IC—Duties & Functions of Regional Iron & Steel Controllers	15
Appendix II—Number of employees under the Department & its attached office	17
Appendix III—List of Public Sector Undertakings under the Department	18

PART—II

Chapter I—Planning and Development in the Steel Sector	21
Chapter II—Production and Distribution	19
Chapter III—The Public Sector	
1. Steel Authority of India Limited	37
2. The Indian Iron and Steel Co. Limited	
3. Metal Scrap Trade Corporation Limited	
4. Visvesvaraya Iron & Steel Limited	
5. Sponge Iron India Limited	
6. Bharat Refractories Limited	
7. New Steel Plants	
8. Kudremukh Iron Ore Co. Limited	61
9. National Mineral Development Corporation Ltd.	63

(iii)

10. Manganese Ore India Limited	71
11. Metallurgical & Engineering Consultants (I) Ltd.	77
12. Hindustan Steelworks Construction Limited	80
Chapter IV—The Private Sector	60
Chapter V—Supply of Raw Materials	94
Chapter VI—Progressive use of Hindi	

APPENDICES

Appendix I—All India Production of Iron & Steel	98
Appendix II—Import of Iron & Steel	99
Appendix III—Export of Pig Iron, Steel and Ferro-alloys	100
Appendix IV—Export of Ferro-alloys	102

PART—I

CHAPTER I

DEPARTMENT OF STEEL—MAIN FUNCTIONS AND ORGANISATIONAL STRUCTURE

1. MAIN FUNCTIONS

1.1 The Department of Steel forms part of the Ministry of Steel and Mines. A detailed list of subjects allocated to the Department is given in Appendix 1-A. Broadly, it is responsible for production, distribution, import and export of Iron and Steel. As such, planning and development of the iron and steel industry; and development of inputs for that industry, such as iron ore, manganese, chromite, limestone and other minerals fall within its purview. The iron and steel industry includes the main steel plants, the electric arc furnace units, the rerolling mills, the wire drawing units and units making special and alloy steels and also ferro alloys.

2. ORGANISATIONAL STRUCTURE

2.1 Apart from the Secretary, the Department of Steel has one Special Secretary, 4 Joint Secretaries, 3 Directors, 4 Deputy Secretaries and 8 Under Secretaries. One of the Deputy Secretaries also acts as the Liaison Officer for keeping watch on the interests of Scheduled Castes and Scheduled Tribes in service matters. An Under Secretary functions as the Welfare Officer. A Technical Development Wing consisting of one Industrial Adviser, three Development Officers and one Assistant Development Officer forms an integral part of the Department. A Special Cell functions in the Department to provide close attention to and follow up on matters concerning public complaints and grievances.

2.2 The Department of Steel has one attached office—namely the office of the Iron and Steel Controller, which is located at Calcutta. The Controller is assisted by 2 Joint Controllers, 4 Deputy Controllers, 7 Assistant Controllers, 1 Industrial Adviser, 2 Development Officers and 1 Assistant Development Officer at the headquarters. There are six regional iron and steel control offices at New Delhi, Kanpur, Calcutta, Madras, Hyderabad and Bombay. Though the organisation was set up initially to perform only certain regulatory functions under the Iron and Steel (Control) Order, 1956; over the years its role and functions have been extended to cover wider areas. It now also

plays an important advisory role in practically all matters relating to the iron and steel industry. The Iron and Steel Controller functions as the monitoring agency for watching supply of steel by the main producers to State Small Scale Industries Corporations, who are the main channel for distribution to small industries. Anyone acquiring iron, steel or scrap is, under the terms of clause 7 of the Iron and Steel Control Order, prohibited from using it otherwise than in accordance with the conditions subject to which it was acquired. The Iron and Steel Control Organisation deals with violations of these provisions; and is given authority under that Order to suspend supplies pending enquiry, and to debar units from supplies for specific periods where violations are established. This is in addition to the provision for prosecution under the Essential Commodities Act. A statement showing the number of inspections etc. carried out by the Iron and Steel Control Organisation during the year 1979-80 and upto November, 1980, to check misutilisation of iron and steel is given in Appendix-1 B. It will be seen that there has been an increase in cases of suspensions and debarment in 1980-81, compared to 1979-80.

The Iron and Steel Controller also closely monitors the working of the electric arc furnace industry. He also heads the Joint Plant Committee set up to perform specific functions under the Iron and Steel (Control) Order, and also to administer various Funds such as the Steel Development Fund; the freight equalisation fund etc. set up in connection with the Steel Industry. One of the important powers of the Joint Plant Committee is to set prices for categories of steel not under statutory price control.

The duties of Regional Iron and Steel Controllers have also been enlarged to cover the developmental aspects. Details of their duties and functions are given in Appendix-1C.

2.3 A statement showing the total number of employees under the Department of Steel and its attached offices as on 31-12-80 and the number of women and those belonging to S.C./S.T. amongst them is at Appendix-II.

2.4 The Iron Ore Board was registered in January 1973, as a society under the Societies Registration Act. The Board was constituted mainly to act as the central policy planning and development agency for iron ore deposits in the country. In October, 1978, Government decided to enlarge the scope of the Board to include other minerals which are important inputs to Steel Industry. The Iron Ore Board was, therefore, renamed

as the Mineral Development Board with effect from June, 1979. The Board, as an expert high level body, is to study on a systematic and scientific basis matters connected with the exploration, conservation, production, processing and utilisation of iron ore and other minerals namely, manganese, chromite, vanadium, titanium, nickel, molybdenum, Tungsten, kyanite, sillimanite, magnesite, tin, tantalum, columbium and cobalt and advise Government on problems relating to these.

2.5 A list of Public Sector Undertakings under the Administrative control of the Department of Steel is given in Appendix-III.

CHAPTER II

SURVEY OF IMPORTANT DEVELOPMENTS DURING THE YEAR—PROBLEMS AND PROSPECTS

1980—81 *An overview*

2.1 STEEL IN THE ECONOMY

2.1.1 The difficulties in respect of supply of coal and power that affected saleable steel output in the previous year continued during the year under review. Government have continued their efforts towards improving the availability of the various essential inputs to the steel sector. Domestic production of saleable steel in the integrated steel plants during the first six months of the current financial year did show some downward trend. Production, however, picked up from October onwards and has in each of the succeeding months shown improvement. Assuming that the tempo of production is maintained at the levels achieved from October, 1980 onwards, the current financial year is expected to end with a saleable steel output which is marginally higher than achieved during the previous financial year. The general shortages of power relative to demand, and the inability of the transport system to cope with the demands placed on it resulted in a lower utilisation of capacity of the various sectors in the economy. Rate of internal growth has continued to be low during the current financial year. The 6th Plan commencing with the current financial year envisages an annual growth rate of about 5.5% during the 5-year period 1980-85.

2.1.2 It was planned, at the beginning of the current financial year to make 10.16 million tonnes of steel available to the economy as compared to the availability of 8.615 million tonnes in the previous year. However, assuming a production level of 6.13 MT of saleable steel from the integrated steel plants and a contribution of 1.73 MT from mini steel plants and imports of 1.46 MT (exports being negligible) the total availability of steel during 1980-81 is estimated to be lower at 9.269 MT than that planned. Nevertheless, this represents an increase of about 7.6% over the availability in the previous year.

2.1.3 The projected targets of production of saleable steel from the integrated steel plants during 1981-82 aim at a production level of 7.28 million tonnes, representing an increase of 1.15 million tonnes i.e. 19% over the likely production during

1980-81. The contribution from mini steel plants is expected to be to a level of 1.6 MT, and assuming the likely import of saleable steel at a level of 1.5 MT as compared to 1.46 MT during 1980-81 and assuming that exports would continue to be restricted to an insignificant level, the overall availability of steel in the economy during 1981-82 is estimated at 10.38 million tonnes as against the likely availability during the current year of the order of 9.269 MT representing an estimated increased availability of 1.11 MT, i.e., 12% increase over and above the availability of steel during 1980-81.

2.2 PRODUCTION

2.2.1 The production of ingot steel in the integrated steel plants during the current year is expected to be of the order of 7.21 MT as against 8.028 MT in 1979-80 and 8.152 MT in 1978-79. The installed rated capacity for production of ingot steel is 11.4 MT. It is expected that there will be a reduction of about 10% in actual production of ingot steel in 1980-81 as compared to 1979-80. This has been the result of a decision taken to restrict the production of ingot steel in order to reduce the stocks of ingots that had already accumulated in the public sector steel plants.

2.2.2 Regarding saleable steel, as against a target of 7.320 MT for the year 1980-81 the expected production at the six integrated steel plants at 6.13 MT will fall short of the target by 16.3%. Even so, this will be marginally higher than the actual production of 6.039 MT achieved during 1979-80.

2.2.3 The production performance has been admittedly substantially below the target and has not been satisfactory. The principal reason for this was the shortage of power supplied to both the coal and steel sectors.

2.2.4 Serious shortfall in supply of power continued to affect the raising of coking coal which in turn led to shortfall in the supply of coking coal to the steel industry below the planned figures required for attaining the target of production of steel. Apart from this, the steel plants were directly hit by shortfalls, interruptions and fluctuations in power supply which was particularly evident in the first half of the year. To transform raw steel into finished steel of different varieties, a steady and full supply of power has to be ensured to the finishing mills in the plant. Inability of the power sector to do so led to piling up of slabs and ingots in the steel plants.

2.2.5 The number of oven pushings has a direct relationship with the supply of coking coal and therefore production of hot metal in the blast furnaces. In order to meet the target of 9,16,00 MT of ingot steel at the six integrated steel plants, the requirement of coking coal was placed at 17.0 MT. The receipt from indigenous sources at the plants, however, is expected to be only 13.0 MT during the year. In addition, receipt from overseas sources is likely to be 0.6 MT making the total coal availability to the steel plants at 13.6 MT representing 80% of the total requirement. As a consequence, the number of oven pushings, which had been planned at 2,174 per day, may be on an average only 1,840 per day, thus amounting to only 85% of the requirement needed for attaining the production target of ingot steel. The steel plants had to operate throughout the year at levels of coal stocks which were dangerously low ranging at times to only 1 and 1½ days consumption. As compared to the stock of 4,49,000 tonnes on 1-4-1978 and 1,37,500 tonnes on 1-4-1979, the year 1980-81 opened with a stock of 1,44,900 tonnes of indigenous coal which came down to the lowest level of 57,900 tonnes on 1st September, 1980. Subsequently, however, imports combined with improved indigenous availability raised the stocks to a level 2,08,900 tonnes on 1-2-1981. During the year difficulties were also experienced in obtaining sufficient number of wagons on a regular basis for movement of coking coal. Similar problems existed in regard to the prompt unloading of ships bringing imported coal at the ports of arrival.

2.2.6 The year 1980-81 opened with a stock of 6.05 lakhs tonnes of ingot steel at the SAIL's integrated steel plants. Because of frequent interruptions and inadequacy in the supply of power to the steel plants, finishing mills had to be operated intermittently. Continuous runs for sustained periods were not possible. Even though coke oven pushings and hot metal production declined, there was further accumulation of ingots and the stocks reached a level of 7.49 lakh tonnes on 1-8-1980. As a result of a decision to bring down the stocks of ingots by regulating their production so as to improve the liquidity of SAIL, the stocks were brought down to 4.22 lakh tonnes on 1-2-1981 and are expected to be reduced further to about 3.5 lakh tonnes by the end of the current financial year.

2.2.7 SAIL's production plan for the year 1981-82 has been formulated on the assumption of coking coal availability of 16.4 MT at 19% ash and adequate power from the supplying agencies. Against this requirement, the indigenous supplies are not expected to exceed 15.28 MT with not less than 20.5% ash.

Allowing for increased requirements as a result of this higher ash content, there will be a gap of about 2.2 MT in coking coal supplies which can be bridged only by imports. To handle such a large magnitude of imports of coking coal and the finished products from the steel plants, special efforts would be required by Railways in terms of provision and movements of wagons and rakes.

2.2.8 The power requirements of the steel plants for achieving the planned outputs would call for a higher and more steady availability of power during 1981-82 than during the current year so as to enable the rolling mills to be run at their optimum capacity levels. It would then not only enable production of ingots and slabs at suitable levels, but also enable the reduction of heavy inventories with the plants. With the commissioning of new units at Bokaro, the process steam requirements will go up, thus increasing the extent of dependence of the steel plant on DVC supply. Thus the DVC's allocations to steel plants will need to go up.

2.2.9 SAIL's production plan for 1981-82 envisages 7.21 MT of ingots, 5.73 MT of saleable steel and 1.424 MT of saleable pig iron, representing growth rates of 35.5%, 24.8% and 8.5% respectively over the expected outputs during the year 1980-81. The six integrated steel plants plan for an output of 9.15 MT of ingot and 7.28 MT of saleable steel which are higher than the estimated achievements of 1980-81 by 26.9% and 19.01% respectively.

2.3 STEEL DEVELOPMENT FUND

2.3.1 Proceeds of the earlier price increases announced in June, 1978 and April, 1979 were to be contributed by steel plants to a fund entitled the "Steel Development Fund", meant for the financing of development outlays of all kinds in the steel plants as also for reimbursement cost increases on the basis of periodical studies by the Bureau of Industrial Costs and Pricing. A Managing Committee consisting of Secretary (Steel) as Chairman and Secretary (Expenditure) and Secretary (Planning Commission) as members regulates the operations of the "Steel Development Fund".

2.3.2 Shortfall in the production of steel in 1980-81 seriously affected the flow of funds to "Steel Development Fund". This coupled with increased costs severely affected the ability of the Fund to provide resources for development. Keeping in view

the general increase in the prices of almost all the inputs and the need to raise resources for development, Government have therefore, approved an increase in steel prices by 20% from 9-2-1981. A price rise of Rs. 400.00 per tonne of pig iron has also been approved. It is estimated that about Rs. 400.00 crores would be available annually due to this increase; and these additional funds will be credited to the "Steel Development Fund". It has also been decided to let the main producers to set prices in tune with the market in respect of bars, rods and semis, where the bulk of the production comes from mini steel plants and re-rollers. These steps will enhance the availability of resources for development of the steel industry.

2.4 PLAN OUTLAY FOR 1980-81

2.4.1 The plan outlay approved for Capital Schemes of the Steel Department for the year 1980-81 was Rs. 803 crores with a budgetary support of Rs. 493 crores as against the actual plan expenditure of Rs. 647.33 crores during 1979-80. The increase of about Rs. 156 crores in the outlays over the previous year's expenditure was mainly due to higher outlays provided for Bokaro 4 MT Expansion stage (Rs. 76 crores), Visakhapatnam Steel Plant (Rs. 58 crores), Salem Steel Plant (Rs. 24 crores), Bokaro Captive Power Plant (Rs. 11 crores), Bhilai 4 MT Expansion (Rs. 16 crores), Silicon Steel Project, Rourkela (Rs. 35 crores) off-set by reduction in the outlays of Kudremukh Iron Ore Project (Rs. 51 crores) and Bharat Refractories Ltd. (Rs. 7 crores). Of the total outlay Rs. 704.68 crores was for the capital schemes of SAIL, of which Rs. 302.50 crores was expected to be financed from SAIL's internal resources and from the 'Steel Development Fund.' Because of shortfalls in the production of saleable steel there was a substantial erosion in the internal resources of SAIL; as also in the accretions to the 'SDF'. At the same time, demands on the 'SDF' for payments towards cost escalations went up because of steep increases in costs of production. As a result of these adverse developments, the extra Budgetary resources to the extent assumed in the original Budget 1980-81 were not available. It therefore, became necessary to increase the draft on the Budget. The revised outlay for SAIL has therefore been fixed at Rs. 662.71 crores and the budgetary support has been increased to Rs. 608 crores from the earlier anticipated figure of Rs. 402 crores.

2.4.2 The Major schemes under implementation are :—

A. SAIL

(i) Expansion of Bokaro Steel Plant to 4 MT (This is now scheduled to be completed by December 1982 except for the

Cold Rolling Mill Complex, which is expected to be ready by September 1983.)

(ii) Expansion of Bhilai to 4 MT (scheduled for completion in October, 1982.)

(iii) Production of cold-rolled grain-oriented and non-oriented sheets at Rourkela (expected to commence from January, 1982.)

(iv) Cold-rolling facilities at Salem using imported hot bands of stainless steel, (scheduled for completion by September, 1981.)

(v) Installation of additional power generation capacity at Bokaro and Durgapur (5×60 MW) in two stages.

B. OTHERS

(i) The construction work of the Kudremukh Iron Ore Project planned for the production of iron ore concentrates for export to Iran has been almost completed according to schedule.

(ii) A demonstration plant at Kothagudem in Andhra Pradesh put up with UNDP assistance for producing sponge iron based on solid reductant has been completed and the Project has gone into trial production.

(iii) The scheme for the development of Bailadila II-C mine, partly to augment ore supply & partly as a replacement for existing Bailadila-14 mine, the ore production of which will gradually taper off, is under implementation and is expected to be completed by March 1984.

2.5 PLAN OUTLAY FOR 1981-82

2.5.1 The plan outlay for Department for 1981-82 has been fixed at Rs. 795.56 crores with a budgetary support of Rs. 568.96 crores; the extra budgetary resources are estimated at Rs. 226.60 crores.

2.5.2 Of this, the outlay for SAIL and its subsidiaries will be Rs. 759.20 crores and major outlays will be on Bokaro 4 MT Expansion (Rs. 165 crores), Bhilai 4 MT Expansion (Rs. 190 crores) Visakhapatnam Steel Plant (Rs. 130 crores), Captive Power Plants at Bokaro & Durgapur (Rs. 65 crores), Silicon Steel Project at Rourkela (Rs. 45 crores), and Salem Steel Plant (Rs. 23 crores). The Kudremukh Iron Ore Project having almost been completed only Rs. 10 crores have been included for this project.

2.6 DISTRIBUTION

2.6.1 Domestic supplies were augmented by imports both for buffer stock which is supplied at domestic prices; and also against specific demands of consumers on a "back to back" basis, in addition to direct imports by Actual users of items on the Restricted list and O.G. items. The distribution policy was kept under constant review with a view to ensuring that the requirements of the priority sectors, such as defence, railways, power projects, etc. were fully met. Requirements of socially important sectors, such as small house builders, farm buildings, colleges, schools, hospitals, received adequate attention. Increased allocations of 5,75,000 tonnes were made to Small Scale Industries Corporations as against the previous year's allocation of 5,25,000 tonnes. Rural distribution centers in selected blocks continued to function. 50 tonnes of steel per month is made available to each such centre and is sold to the rural consumers at prices not exceeding stockyard prices.

2.6.2 End use restrictions continued on all categories of iron and steel. As a result of vigorous measures taken to check mis-utilisation of iron and steel materials, a large number of cases of misuse were detected, leading to those responsible being debarred from further allotment. During the period April 1980 to November 1980, 3,401 inspections were carried out of which supplies to 678 units were suspended and 420 units were debarred from further supplies.

2.7 SPONGE IRON PLANT KOTHAGUDEM

2.7.1 The production of steel otherwise than through the conventional blast furnace route has assumed national importance in view of the limited resources of coking coal in the country. Accordingly, a decision was taken to set up a demonstration sponge iron plant with SL/RN technology. Sponge Iron India Limited, a Public Sector company, was also formed to establish such a plant with UNDP/UNIDO assistance and with a capacity of 30,000 tonnes of sponge iron annually, using non-coking coal as reductant. The plant was commissioned in July, 1980 and was formally inaugurated by the Vice-President of India on the 31st December, 1980. The plant has already attained its rated capacity of 100 tonnes per day. This marks a major breakthrough in enabling production of steel using non-coking coal of which this country has abundant resources.

2.8 KUDREMUKH IRON ORE PROJECT

2.8.1 A significant achievement during the year has been that Mill line No. 4 and the connected facilities as well as the Filtration plant with ancilliary systems at Mangalore was commissioned on 22-8-1980 i.e. a day ahead of schedule, and slurry pumped to Mangalore. The project, therefore, got poised for the first shipment of concentrate according to schedule. Although the project is now ready for the supply of concentrates, Iran has indicated that it would not be in a position to accept the supply for about two years. The Government of Iran has also asked for a review of the two contracts, namely, financial as well as the sale and purchase, signed by the previous Iranian regime. Discussions have been held on two occasions in the past with the Iranian Government and the National Iranian Steel Industries Company (the purchaser) with a view to resolving the differences. A visit by a high level Indian delegation to Iran in October 1980 could not materialise due to outbreak of the hostilities between Iran and Iraq. Meanwhile, vigorous efforts are being made by the Company to locate alternate markets in the foreign countries for the sale of the concentrate.

2.8.2 A proposal to set up a pellet plant at Mangalore to utilise a portion of the surplus concentrate has been approved, in principle, by the Public Investment Board.

APPENDIX-1A

MINISTRY OF STEEL AND MINES

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 including beneficiation/upgrading of low grade iron ores.
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 lease or matters connected therewith.
7. Steel Authority of India Limited.
8. Kudremukh Iron Ore Company Limited.
9. Manganese Ore (India) Limited.
10. National Mineral Development Corporation Limited.
11. Metallurgical and Engineering Consultants (I) Limited.
12. Hindustan Steelworks Construction Limited.
13. Bharat Refractories Limited.
14. Sponge Iron India Limited.
15. Indian Iron and Steel Co. Ltd. (Subsidiary of SAIL).
16. Indian Iron and Steel Co. Stanton Pipe and Foundry Co. (Subsidiary of IISCO).
17. Metal Scrap Trade Corporation (Subsidiary of SAIL).
18. Ferro Scrap Nigam Ltd. (Subsidiary of MSTC).

19. India Firebricks & Insulation Co. Ltd., (Subsidiary of BRL).
20. All Attached or Sub-ordinate Offices or other organisations concerned with any of the subjects specified in this list.
21. The Indian Iron and Steel Company (Acquisition of shares) Act, 1976, dated 2-9-1976.
22. The Indian Iron and Steel Co. (Acquisition of Shares) Amendment Act, 1977.
23. Bolani Ores Limited (Acquisition of Shares) and Miscellaneous Provisions Act, 1978 (42 of 1978).
24. The Public Sector Iron and Steel Companies (Restructuring) and Miscellaneous Provisions Act, 1978 (60 of 1978).
25. The Assam Sillimanite Limited (Acquisition and transfer of refractory plant) Act, 1976 (72 of 1976).
26. Mineral Development Board.

APPENDIX—1 B

Statement showing the number of Inspections/Suspension/Debarment effected by the Regional Iron and Steel Controllers during the year 1979-80.

Region	No. of Inspections	No. of Suspension Cases	No. of Debarment Cases
1	2	3	4
Calcutta	451	33	28
Delhi	222	96	110
Bombay	940	100	32
Madras	1261	199	152
Hyderabad	905	158	26
Kanpur	410	47	17
TOTAL	4189	633	365

Statement showing the number of Inspections/Suspension/Debarment effected by the Regional Iron and Steel Controllers during the period April, 1980 to November, 1980

Region	No. of Inspections	No. of Suspension Cases	No. of Debarment Cases
1	2	3	4
Calcutta	556	75	52
Delhi	225	90	85
Bombay	556	87	38
Madras	1020	140	108
Hyderabad	731	203	99
Kanpur	313	83	38
TOTAL	3401	678	420

APPENDIX-1C

DUTIES AND FUNCTIONS OF THE REGIONAL IRON AND STEEL CONTROLLERS

(i) To collect factual information regarding the capacities of all iron and steel based units registered with the Iron and Steel Controller and, inter-alia to monitor particulars of the various inputs, production and capacity utilisation of these units on a regular basis.

(ii) In all cases where import clearance is given by the Iron and Steel Controller, to ensure proper utilisation of imported materials and to report about the actual requirements of raw material, spare parts and other consumables. This, however, is subject to formal concurrence of the Ministry of Commerce.

(iii) To identify and encourage industrial units taking up programmes of import substitution and also suggest items which need not be imported because of indigenous availability.

(iv) To render assistance to core projects and priority sectors in obtaining their requirements of steel.

(v) To conduct monthly market survey and report the overall availability and supply position of iron and steel materials in their regions with the particular reference to price trends of critical items.

(vi) To aid, assist and guide the iron and steel based units to increase production by ensuring adequate supply of raw materials and other inputs.

(vii) To inspect iron and steel based units registered with DGTD and also report progress of implementation of letters of Intent and licences issued by the Government of India so far as they pertain to the Iron and Steel Industry.

(viii) To conduct status survey of the iron and steel industry licensed by Iron and Steel Controller.

The Regional Controllers now also monitor supplies to SSICs by the Main producers with a view to ensuring that the SSICs are helped to meet the requirements of small scale units.

During the current year also, as in the previous year, the following continued to receive attention of the Regional Controllers:—

- (a) To monitor supplies of steel from the Main Producers' Stock-yards to the export fabricators to ensure that the supplies against the releases made to such fabricators mature effectively.
- (b) In connection with checking of steel supplies reaching the small scale industrial units through the Small Scale Industries Corporations of the State Governments, to function as coordinators in consultation with the State Directorate of Industries along with such Corporations and the Iron and Steel Controller.
- (c) To oversee the functioning of the Stockyards of the Main Producers to ensure that their functioning conforms to the guidelines issued by Central Government from time to time. This includes supplies of steel to the small house builders by such stockyards against the quota of their receipts earmarked by the Central Government for the purpose.
- (d) To keep watch over the prevailing open market prices of iron and steel for facilitating remedial action for removal of the regional imbalances that crop up from time to time.
- (e) To inspect and collect data from different small, medium and large scale steel re-rolling mills required for the Technical Committee formed under the Chairmanship of the Iron & Steel Controller.
- (f) Joint Teams consisting of the Regional Controllers and the representatives of D.C., SSI and State Directors of Industries are inspecting and collecting data on electric furnace units who have applied for permission to instal re-rolling mills for conversion of their own ingots/billets and for furnishing reports on such applicants required for formulation of policy by the Central Government in this regard.

APPENDIX—II

DEPARTMENT OF STEEL

(INCLUDING ITS ATTACHED OFFICE)

Statement showing the total number of Government servants and the number of Scheduled Castes and Scheduled Tribes and women amongst them as on 31-12-1980).

Class	Total No. of Employees.	Scheduled Castes.	Scheduled Tribes	Women
Group A . . .	50	3	1	1
Group B . . .	97	7	—	1
Group C . . .	356	62	6	57
Group D . . .	161	42	9	1
TOTAL : . . .	664	114	16	60

II-218/2584
APPENDIX-III

LIST OF PUBLIC SECTOR UNDERTAKINGS UNDER THE
DEPARTMENT OF STEEL

1. Steel Authority of India Limited.
2. Indian Iron & Steel Company Limited.
(Subsidiary of Steel Authority of India Limited)
3. Metallurgical & Engineering Consultants (India) Limited.
4. Hindustan Steelworks Construction Limited.
5. Kudremukh Iron Ore Co. Limited.
6. National Mineral Development Corporation Limited.
7. Manganese Ore (India) Limited.
8. Bharat Refractories Limited.
9. Indian Firebricks & Insulation Co. Limited.
(Subsidiary of Bharat Refractories Limited).
10. Metal Scrap Trade Corporation.
(Subsidiary of Steel Authority of India Ltd.)
11. Ferro Scrap Nigam Limited.
(Subsidiary of MSTC).
12. Sponge Iron India Limited.
13. IISCO Stanton Pipe & Foundry Company Limited.
(Subsidiary of Indian Iron & Steel Co. Ltd.).

PART-II

CHAPTER I

PLANNING AND DEVELOPMENT IN THE STEEL SECTOR

1.1.1 The increase in the steel making capacity in the integrated steel plants over the Five Year Plans has been as follows:—

(In million Tonnes)

Five Year Plans	Year ended	Installed capacity (steel ingots)
FIRST	31st March, 1956	1.5
SECOND	31st March, 1961	6.0
THIRD	31st March, 1966	8.9
FOURTH	31st March, 1974	8.9
*FIFTH	31st March, 1978	10.6

1.1.2 The present installed capacity with integrated steel plants is 11.4 million tonnes in terms of steel ingots and 8.729 million tonnes in terms of saleable steel. Apart from this, the installed capacity with mini steel plants (inclusive of Alloy & Special Steel, etc.) is 3.3 million tonnes of pericl ingots. The present installed capacity, target of production for 1980-81 and actual production during April-December, 1980, plant-wise, is given in Annexure-A. The fulfilment of target on 9 months' production basis has been 76.6% in terms of steel ingots and 80% in terms of saleable steel.

1.1.3 Serious shortfall in the supply of power affected the raising of coking coal which in turn led to shortfall in supply of coking coal to the steel industry, below the planned figures, required for attaining the target of production of steel. Apart from this, steel plant were directly hit by shortfalls, interruptions and fluctuations in power supply.

1.1.4 The following strategies have been adopted in the Draft Sixth Five Year Plan Document of the Planning Commission while planning the steel industry during the Sixth Plan period.

(*The Plan was terminated one year early).

(a) Removal of infrastructural constraints, including import of coking coal. Coking coal needs to be imported partly on account of supply constraints, and partly to off-set the high ash content of indigenous coal. Approximately, 1 to 2 million tonnes of coal may need to be imported per year for some time;

(b) Provision of captive power plants to cater to the essential operating needs of steel plants particularly at Bokaro, Durgapur and Rourkela;

(c) Acceleration of R & D activities relatable to utilisation of inferior grades of coal in blast furnaces, improving steel making practices to get higher productivity and yields, etc.;

(b) Speedy implementation of modernisation and replacement programmes to quickly enhance productive capacities and productivity;

(e) Speedy implementation of expansion schemes;

(f) Implementation of the Vizag Steel Project so as to make it operationally by the first year of the next plan, and if possible to take up a second project.

1.2 DEMAND AND AVAILABILITY OF STEEL

1.2.1 The above strategies would be aimed at meeting the demand projections of 12.9 million tonnes by 1984-85 and 18.4 million tonnes by 1989-90, starting from a consumption level of 8 million tonnes in 1979-80. The production of steel including the output of mini steel plants has been planned to be increased from 7.3 million tonnes in 1979-80 to 11.5 million tonnes in 1984-85 and 17.4 million tonnes in 1989-90 provided the infrastructural constraints are adequately eradicated. Even under this condition, there will be need for marginal import of steel, as there will be imbalances between various categories of steel i.e. shortage of shaped products and a surplus in flat products in 1984-85.

1.3 STEEL EXPANSION PROGRAMME

1.3.1 The programme calls for a major step up in capacities although much of it would fructify only towards the later part of the plan period and mostly in the Seventh Plan. This situation is inherent in a long gestation investment sector such

as steel. The additional capacities envisaged in the Draft are :—

Plant	Scheme	Years	
		Completion	Start of Production
Bhilai Steel Plant .	4.0 MT expansion	1982-83	1983-84
Bokaro Steel Plant .	(a) 4.0 MT expansion	1982-83	1982-83
	(b) 4.75 MT stage	1986-87	1987-88
Vizag Steel Plant .	(a) Ph. I	1984-85	1985-86
	(b) Ph. II	1987-88	1987-88

In arriving at the relative investment priorities, greatest stress has been laid on completion of continuing schemes as also for modernisation and rationalisation programmes. Some of the new schemes which have been included in the Plan and which may require investment to effectively take place during the later part of the Plan period will be funded only after a mid-term appraisal of the Plan, and if availability of resources so permits. In the past, the construction of steel plants has been seriously affected due to delay in the supply of equipment, both indigenous and imported, slippages in the schedule of civil work, erection of equipment etc. Steps for speedier implementation of projects and for closer monitoring of the progress of supplies of critical inputs, of construction and erection will need to be taken.

1.4 INVESTMENT PLAN

1.4.1 Keeping in view the projected growth-rate, inter-sectoral priorities to various sector of economy and severe financial constraints National Development Council which met in February, 1981, have recommended an allocation of Rs. 4,000 crores for the Steel sector, etc. during the Sixth Plan period 1980-85. The scheme-wise outlay as proposed in the Draft Sixth Plan Document, is given in Annexure-B.

1.4.2 Some of the important schemes under implementation/consideration are :—

- Expansion programme of Bhilai and Bokaro Steel Plants to annual capacity of 4.0 million ingot tonnes each.
- Further expansion of Bokaro Steel Plant to 4.75 million ingot tonnes per annum.

- (iii) Salem Steel Plant with an annual capacity of 32,000 tonnes of cold rolled stainless steel sheets based on imported hot bands.
- (iv) Implementation of Visakhapatnam Steel Project of 3.25 million ingot tonnes capacity in two over-lapping stages.
- (v) A Second-Shore Based Steel Plant with an ultimate capacity of 3.0 million tonnes of crude steel.
- (vi) Modernisation of Tata Iron & Steel Co. with a view to increase the existing capacity of 2.0 million ingot tonnes to 2.16 million ingot tonnes.
- (vii) Provision of additional melting facilities at Alloy Steels Plant, Durgapur, to increase the existing capacity from 100,000 tonnes ingot to 160,000 tonnes ingot of Alloy Steels.
- (viii) A project to produce 37,500 tonnes per annum of cold rolled grain oriented electrical steel sheets and 36,000 tonnes per annum of cold rolled non-grain oriented steel sheets at Rourkela Steel Plant.
- (ix) A Demonstration Sponge Iron Project at Kothagudem, Andhra Pradesh with UNDP assistance with an installed capacity of 30,000 tonnes/annum was commissioned in December, 1980, and is functioning satisfactorily. The proposal for installing an experimental melting furnace to demonstrate the use of sponge iron in electric steel-making with UN assistance is under consideration. It is also proposed to expand the present capacity to a final capacity of 60,000 tonnes of sponge iron/annum.
- (x) Modernisation of Bhilai, Rourkela and Durgapur Steel Plants to have increased productivity with minimum investment.
- (xi) A Pelletisation Plant of 3.0 million tonnes/annum capacity based on Iron Ore concentrates from Kudremukh Iron Ore Co. Ltd.
- (xii) R&D Project of SAIL for a Direct Reduction Pilot Plant with a capacity of 10 tonnes per day using of Solid Reductant, i.e. Non-coking coal.

- (xiii) Installation of 3×60 MW Thermal Generating units at Bokaro Steel Plant and 2×60 MW Thermal Generating Units at Durgapur (For Durgapur Steel Plant & Alloy Steels Plant) to augment captive power generating capacity.

Statement "A"

Production at the Integrated Steel Plants for the year 1980-81

(in '000 tonnes)

Steel Plants	Annual rated Capacity	For the year 1980-81		For year 1979-80
		Target	Actuals April-Dec. 1980	
(A) INGOT STEEL				
Bhilai	2500	2200	1461	2108
Durgapur	1600	1070	516	882
Rourkela	1800	1460	857	1268
Bokaro	2500	1820	621	1426
IISCO	1000	670	436	565
Sub-total	9400	7220	3891	6249
(SAIL) TISCO	2000	1940	1377	1779
TOTAL	11,400	9160	5268	8028
(B) SALEABLE STEEL				
Bhilai	1965	1830	1292	1706
Durgapur	1239	855	394	604
Rourkela	1225	1080	665	1045
Bokaro	2000	1500	544	849
IISCO	800	530	373	430
Sub-total	7229	5770	3260	4592
(SAIL) TISCO	1500	1550	1117	1447
TOTAL	8729	7320	4377	6039
(C) SALEABLE PIG IRON				
Bhilai		600	299	519
Durgapur		250	96	121
Rourkela		—	—	4
Bokaro		500	557	280
IISCO		50	50	52
TOTAL		1400	1002	976

ANNEXURE 'B'

OUTLAY FOR CENTRAL INDUSTRIAL AND MINERAL PROJECTS IN THE 6TH PLAN (1980-85)

(Rs. in crores)

Sl No	Organisation/Project/Scheme	Sixth Plan (1980-85) outlay
1	2	3
1	DEPARTMENT OF STEEL	4000.00
A	STEEL	3757.21
1.1	Bhilai Steel Plant	915.27
1.1.1	Continuing Schemes	741.64
1.1.1.1	4 M.T. Expansion	740.00
1.1.1.2	Other Scheme - Second Sintering Plant, Dalli Mechanised Mines and 8th Coke Oven Battery	1.64
1.1.2	Additions, Modifications, Replacement, Township, etc.	27.50
1.1.3	New Schemes	110.00
1.1.3.1	Plant Modernisation	100.00
1.1.3.2	Expansion of Mines—Expansion of Dalli Mines, Development of Lime stone quarry	10.00
1.1.4	S & T Programme	36.13
1.2	Durgapur Steel Plant	179.65
1.2.1	Continuing Schemes : Captive Power Plant	74.65
1.2.2	Additions, Modifications, Replacement, Township, etc.	55.00
1.2.3	New Schemes : Modernisation of Steel Plant	50.00
1.3	Rourkela Steel Plant	422.43
1.3.1	Continuing Schemes	96.75
1.3.1.1	Silicon Steel Project	87.21
1.3.1.2	Modernisation of Hot Strip Mill	6.61
1.3.1.3	Additional Neptha Reforming plant	2.93
1.3.2	Additions, Modifications, Replacement, Township, etc.	52.50
1.3.3	New Schemes	273.18
1.3.3.1	Cement Plant	120.51
1.3.3.2	Fertilizer Plant diversification	20.00
1.3.3.3	Modernisation of Steel Plant	50.00
1.3.3.4	Coke Oven (Vth Battery)	12.67
1.3.3.5	Captiver Power Plant	70.00
1.4	Bokaro Steel Plant	811.00
1.4.1	Continuing Scheme	711.00
1.4.1.1	1.7 M.T. Stage	8.72
1.4.1.2	4 MT Expansion including CRM Complex	561.14
1.4.1.3	Slag Granulation Plant	1.67
1.4.1.4	Captive Power Plant	101.78
1.4.1.5	Iron Ore Mine, Meghabataburu	35.88

1	2	3
1.4.1.6	Kiriburu Expansion	1.81
1.4.2	Additions, modifications and replacement	35.00
1.4.3	New Schemes	65.00
1.4.3.1	4.75 MT Expansion	50.00
1.4.3.2	Slag Granulation Plant expansion	10.00
1.4.3.3	Sixth Blast Furnace Complex	5.00
1.5	Alloy Steels Plant, Durgapur	31.28
1.5.1	Continuing Schemes (Stage I Expansion)	5.03
1.5.2	Additions, modifications, replacement, township, etc.	11.25
1.5.3	New Schemes (Secondary refining facilities—Stage II)	15.00
1.6	Indian Iron and Steel Co. Ltd	127.66
1.6.1	Continuing Scheme	16.66
1.6.1.1	Plant rehabilitation scheme	2.54
1.6.1.2	No. 10 Coke Oven Battery	11.66
1.6.1.3	Departmentalisation of Mine	2.26
1.6.2	Additions, modifications, replacement, township	30.00
1.6.3	New Schemes	81.00
1.6.3.1	Development of ore mines and collieries	35.00
1.6.3.2	Diversification of Kulti works	6.00
1.6.3.3	Sintering Plant with ancillaries	40.00
1.7	Visakhapatnam Steel Plant (Continuing Schemes) (3.4 MT Steel Plant—Stage I & II)	1050.00
1.8	Salem Steel Plant (Continuing Schemes)	78.73
1.9	Second New Steel Plant (New Schemes)	50.00
1.10	Visveswerya Iron and Steel Co. Ltd. (Continuing Schemes)	6.00
1.11	Metal Scrap Trading Co. (Continuing Schemes)	5.00
1.12	Metallurgical Engg. Consultants India Ltd. (Continuing Scheme)	4.07
1.13	Hindustan Steel Construction Ltd	10.00
1.14	Sponge Iron (India) Ltd.	8.00
1.14.1	Continuing Schemes (Demonstration Pilot Plant Project)	3.00
1.14.2	New Schemes (Balancing facilities, experimental)	3.00
1.15	Bharat Refractories	8.92
1.15.1	Continuing Schemes : Corporate Office, Development of fire clay mines, etc.	6.92
1.15.2	New Schemes (Rotary Kiln Complex, Expansion of Refractories Plant at Ranchi Rd., Sea Water Magnesite Plant, etc.)	2.00
1.16	SAIL/Central Units	4.00
1.16.1	Continuing Schemes (Corporate Office and Management. Training Instt. Complex at Ranchi)	1.50

3—1241 Steel/80

1	2	3
1-16-2	New Schemes (Scheme for home sale & exports)	2.50
1-17	Vijayanagar Steel Plant	2.00
1-18	R & D Centre at Ranchi	41.70
1-19	Mahanadi Project (Loan to Madhya Pradesh Govt.)	1.50
B	FERROUS MINERALS	242.79
1-19	National Mineral Development Corporation	68.24
1-19-1	Continuing Schemes	5.60
1-19-1-1	Bailadila No. 5 Mine	1.12
1-19-1-2	Donimalai Mine	1.48
1-19-1-3	Exploration and feasibility studies	3.00
1-19-2	Replacement and Renewals	15.00
1-19-3	New Schemes	45.64
1-19-3-1	New Mine at Bailadila	20.00
1-19-3-2	Bailadila No. 11-C Mine	11.78
1-19-3-3	Fine Ore Handling Plant at Bailadila No. 5 Mine	13.86
1-19-4	S & T Programme	2.00
1-20	Kudremukh Iron Ore Project Ltd. (Continuing Scheme)	70.00
1-21	Manganese Ore (India) Ltd.	19.55
1-21-1	Continuing Scheme (Shaft sinking & optimisation of existing Mines)	5.55
1-21-2	Replacement and Renewals	4.00
1-21-3	New Schemes : Beneficiation & agglomeration plant, Ferro manganese plant, AMD/EMM Plant)	10.00
1-22	Mineral Development Board (Continuing Schemes)	5.00
1-23	Pellet Plants (New Schemes)	80.00

CHAPTER II

PRODUCTION AND DISTRIBUTION

2.1 OVERALL PRODUCTION OF STEEL IN 1980-81

2.1.1 The steel plants continued to face shortage of essential inputs like power and good quality coking coal even during 1980-81. Despite the constraints, they were able to produce 5.268 million tonnes of ingot steel and 4.377 million tonnes of saleable steel during April-December, 1980. Keeping in view the general trends as also the improved supplies of power and coal during the last quarter, it is expected that the production of saleable steel from the six integrated steel plants during 1980-81 will be higher though marginally, than the production in the previous year, which was 6.039 million tonnes. An overall strategy for steel production was worked out in terms of the availability of infrastructural inputs, the stock position and the market conditions. According to it emphasis has been placed on maximisation of production of saleable pig-iron. Production of pig-iron during 1980-81 is expected to be 13 lakh tonnes against 9.76 lakh tonnes during 1979-80. Other efforts to maximise production are also continuing.

2.1.2 The production of steel in the integrated steel plants is supplemented by production in the 147 mini-steel plants which have a total licensed capacity of about 3.3 million tonnes of ingot steel. The actual production from the mini steel plants during April-November, 1980 was 12.30 lakh tonnes. Though the production during the current year would be higher at about 17.29 lakh tonnes against the production of 16.63 lakh tonnes during 1979-80, it could have been even higher if power availability had been better.

2.1.3 Category-wise details of production of saleable pig-iron and steel during the last five years are given in Appendix I.

2.2 DISTRIBUTION

2.2.1 During the year under review, the distribution policy continued to remain consumer-oriented. The basic objective of the distribution policy for steel has been to ensure equitable

supply to important sectors of the economy like Defence, Railways, Power Projects, Engineering Export Promotion Councils, State Small Industries Corporation etc.

2.2.2 With this in view the consumers were grouped into Status Groups—*Status 'A'* comprising of specified priority sectors: *Status 'B'* comprising of other Government departments and undertakings not specified under *Status 'A'*; *Status 'C'* comprising of large and medium industries; and *Status 'D'* comprising of all other demands. Formal distribution guidelines were issued in the beginning of the year setting out clearly the procedure of registration of demands with and supplies from the main producers and their stockyards in respect of the different groups of consumers. Special provisions, mostly based on past off-take and/or installed capacities have been made for compact groups of industries like re-rollers, forging units, wire drawing units, bright bar manufacturers and other industries. The Guidelines also provided for consideration of cases of sick and new units and working out their entitlements.

2.2.3 Based on the production plans of the main producers and anticipated imports under the buffer scheme, annual allocations were made to the different priority sectors at the beginning of the year. Later, within the overall annual allocations, quarterly allocations were made to them, on the basis of the realistic production plans submitted by the producers from quarter to quarter.

2.2.4 The system of buffer imports introduced for the first time in 1978-79 is continuing and all supplies from buffer imports are dovetailed with domestic distribution. The policy for import of steel has been further liberalised and several items like weldable quality plates, CR Sheets in deep drawing/extra deep drawing quality, dynamo grade electrical steel sheets etc; have been placed under Open General Licence for direct import by the actual users. Simultaneously, to increase the domestic availability, exports of most of the categories have been banned. Similarly, with a view to relieving the pressure on domestic availability of hot rolled Coils/Skelp, export of tubes manufactured out of indigenous materials has been banned. With these steps, it was possible to improve availability of steel although, owing to shortages of power and coal, the availability of sale-

able steel from domestic purchase may be substantially lower than the last year as per details below:—

	(In '000 tonne)		
	1980-81 (expected)	1979-80	1978-79
A. Production			
Main Producers	6130	6028	6556
Mini steel Plants	1729	1313	1503
TOTAL	7859	7341	8059
B. Canalised Imports	1460 MT	1334	656
C. Exports	50	60	524
	9269	8615	8191
Net availability (A+B-C)			
Increase over the previous year	654 (7.6%)	424 (5.2%)	

Supplies from the stockyards

2.2.5 While a few customers, like railway projects, defence units etc. get the supply directly from the plants, most of the requirements are met from the stockyards. After meeting the priority requirements, the available material is distributed through the net work of stockyards. The stockyards cater directly to the requirements of all the DGTD units and those small scale units who are in the Compact Group (Re-rollers, Bright bar/Fasteners Manufacturers, Wire Drawing Units, Tube-makers/Cold Rollers, Drum and Barrel manufacturers) and those small scale units having past-off-take of not less than 200 tonnes, (100 tonnes for those located in Kerala, Tamil Nadu, Andhra Pradesh and Karnataka) per quarter.

Supplies to Small Scale Industries

2.2.6 The requirements of the small scale units other than those covered above are met through State Small Industries Corporations (SSICs). The Iron & Steel Controller monitors supplies to these Corporations. As against 176,000 tonnes despatched during 1977-78, the despatches were about 333,000 tonnes in 1978-79 and over 450,000 tonnes in 1979-80. In 1980-81 the programme is for supply of about 575,000 tonnes

to SSICs. If any Corporation is unable to meet the requirements of a unit, the unit can draw its requirements from the stockyards on production of the necessary certificates, from the Corporation. As a measure of assistance to the small scale sector, supplies to the Corporations are being made at a concessional price and they, in turn, are expected to supply the material to the units at prices which are Rs. 40/- per tonne less than the stockyard prices.

2.2.7 In line with the general policy for canalising more and more supplies to the small scale units through the SSICs pig iron for small scale units is now supplied through the SSICs wherever the Corporations are willing and able to handle the same. In other places the supplies are effected through the stockyards.

Supplies to Private House Builders, Cooperative Housing Societies and Religious Institutions

2.2.8 As the open market prices for bars and rods continued to remain high, with a view to help the individual house builders, provisions were made in the guidelines for supply of their steel requirements upto 5 tonnes each. Similar facilities were available to Cooperative Housing Societies.

Rural Distribution Centres

2.2.9 With a view to making the steel available to the rural consumers at a reasonable price, Rural Distribution Centres have been set up by SAIL in selected blocks in the country. Fifty tonnes of steel per month is made available to each centre, and is sold to the rural consumers at prices not exceeding stockyard prices. The cost of transporting steel from the stockyard to the centres is borne by SAIL. A rebate of Rs. 150/- per tonne is also given, in addition to the agencies running the centres. These are operated either through the State-Agro-Industries Corporations or the State Cooperative Marketing Organisation.

Steel requirements for the Asian Games

2.2.10 The total requirement of steel for the Asian Games was estimated as about 51,000 tonnes of which 32,000 tonnes had to be supplied on a crash programme basis to meet the time schedule for the construction of various facilities. The supply plan for this has been drawn up and the supplies are being made according to the programme.

Steel requirements for engineering exports

2.2.11 With a view to encourage engineering exports, the allocations of steel materials to engineering exporters were increased to 3,21,000 tonnes including 22,400 tonnes from back to back imports during 1980-81, which represented an increase of 42% over the actual supplies of around 229,000 tonnes in 1979-80. After a mid-year review of supplies to the sector, it was decided that the annual commitment to the sector should be met in full and for this purpose engineering exports were given the highest priority in supplies, next only to operational defence and Asian Games. In order to enable the exporters to meet their commitments of physical exports during the year, it was further decided that a portion of the materials should be supplied under a Crash Programme within the period ending 31-1-1981. Instructions were also given to the producers that in order to meet the above commitments, they may make necessary diversions from supplies meant for other sectors except Defence and Asian Games and the supplies so diverted may be replenished from buffer imports made specially on this account.

2.3 PRICING

2.3.1 During the year the Joint Plant Committee, rationalised the section/size and quality extras with effect from 15-7-1980 which resulted in bringing down the number of quality extras from 264 to 46 and size extras from 155 to 40, thereby facilitating the easier administration of extras. With effect from 9-2-1981 an increase of Rs. 400/- per tonne in the price of pig iron and 20% in that of steel over the prevailing J.P.C. prices has been announced in order to ensure continued availability of resources for development. This increase in prices is to be credited to the Steel Development Fund which is intended primarily for financing the developmental expansion and modernisation needs of steel industry. Cost escalations of the producers, based on proper cost studies by BICP, are also met from this Fund. With effect from the midnight of 23/24th February, 1981 the prices of bars, rods and semis have been allowed to be fixed by the main producers themselves. The major portion of the production in these categories comes from mini steel plants/re-rollers whose prices were not subject to JPC discipline. The main producers will now be able to derive benefit from the higher prices prevailing in the market and thereby augment their internal resources.

2.4 IMPORTS

2.4.1 1980-81 has been another year of continued shortages in availability of steel within the country. Keeping this position in view the import policy continued to be liberal and followed broadly the pattern that was in force in 1979-80. The items other than those covered by the restricted list, canalised list and the banned list continued to be importable under open general licence by the actual users (industrial). The bulkable items and the items which are mainly produced within the country continued to be in the canalised list. The procedure for direct allotment of the canalised items by the canalising agency continued. Imports of such items were allowed freely to the canalising agency. The policy is flexible permitting import of even items in the banned list subject to fulfilment of specified conditions. The interest of maintaining indigenous production and the developmental activities were taken care of in formulating the import policy and, at the same time, an attempt was made to ensure that the procedural difficulties do not result in un-due hardships to the genuine users.

2.4.2 SAIL continued to be the canalising agency for the canalised items of prime steel and tinplate wastes/waste. Stainless steel plates, sheets, strips and coils continued to be canalised through MMTC whereas other sections of stainless steel were canalised through SAIL. The Metal Scrap Trade Corp. Ltd., continued to be the canalising agency for import of ferrous melting scrap as well as old ships for breaking.

2.4.3 Buffer import programme to supplement the indigenous availabilities continued during 1980-81. As against 5,44,000 tonnes, in 1978-79 and 9,50,000 tonnes in 1979-80, the buffer programme for 1980-81 covered import of 6,92,000 tonnes. These imports were exempted from payment of customs duties and countervailing excise duties. The materials imported are then supplied to the consumers at the same prices as indigenous materials. The difference between the imported price and the sale price is re-imbursed to the importing agency, SAIL, from a fund generated through a levy of Rs. 100 per tonne on production of steel by the main producers in the country. The buffer imports are mainly in the categories—structural plates, hot-rolled coils/cold-rolled coils and tinmill black

2.4.4 The import plan of SAIL for 1980-81 provided for import of 1.46 million tonnes of steel, including 6,92,000 tonnes

under the buffer programme. The actual import (shipment from abroad) in 1979-80 by SAIL was 1,385,442 tonnes comprising of 485,201 tonnes on back to back basis and 900,241 tonnes under the buffer programme. The total value involved was Rs. 448.95 crores. During April—December, 1980 shipments from abroad added upto 603,687 tonnes, of which 320,979 tonnes was on back to back basis and 282,708 tonnes was under the buffer programme. The ordering for 1980-81 till the end of December, 1980 was 1,170,591 tonnes (509.955 tonnes back to back 660,636 tonnes buffer) valued at Rs. 382.88 crores.

2.4.5 Import of items like cold rolled coils/tinmill black plate for conversion into tinplate within the country is being resorted to ensure better utilisation of the capacity for tinning already established within the country. The indigenous production of cold rolled coils/tinmill black plate is not enough to match the requirements for tinning.

2.4.6 MMTC imported 34,942 tonnes of stainless steel sheets plates strips in 1979-80 and 4,454 tonnes in 1980-81 during April—October, 1980. Imports in 1980-81 by MMTC had to be slowed-down due to slow off take of stocks lying with the canalising agency.

2.5 EXPORTS

2.5.1 In view of the increased domestic demand, exports of iron and steel items continued to be restricted mainly to the extent of past commitments and to certain unavoidable trade plan provisions. Exports of pig iron, HR Coils, bars and rods and semis continued to be banned.

2.5.2 Exports of iron and steel and ferro alloys for 1979-80 and 1980-81 (April—December 1980) are given below :—

	1979-80		1980-81 (April—Dec. Prov.)	
	Qty.	Value	Qty.	Value
Pig Iron	44,197	43.125	—	—
Steel	60,659	141.086	39,991	106.079
Ferro-Alloys	72,886	177.0	10,668	12.020

Qty.—tonne.
Value—Rs. million.

2.5.3 Category-wise break-up for exports is given in Appendix III

2.5.4 During the first six months of the current financial year i.e. 1980-81, no export of ferro alloys was allowed. During the first three months of the second half of the current year (October—December 1980), however, some quantities of high carbon ferro chrome and ferro manganese slag were allowed to be exported.

2.5.5 Category-wise break-up of ferro alloy exports during 1980-81 (April—December, 1980) is given in Appendix IV.

CHAPTER III

THE PUBLIC SECTOR

3.1 STEEL AUTHORITY OF INDIA LIMITED

General

3.1.1 Steel Authority of India Limited is an apex body in the steel sector controlling all the integrated steel plants in the country except Tata Iron and Steel Company which is in the private sector.

Finance

3.1.2 The authorised capital of the company was raised from Rs. 2,500 crores to Rs. 3,000 crores during the year 1980-81. The paid up share capital of the company as on 31-3-1980 stood at Rs. 2,434.13 crores. This excludes the share money of Rs. 56.62 crores pending allotment. The paid up capital as on 31-3-79 (excluding share money of Rs. 29.85 crores pending allotment) was Rs. 2,228.02 crores.

3.1.3 During 1979-80 loans amounting to Rs. 46.56 crores were advanced to the Company by the Government. The Company repaid loans amounting to Rs. 57.48 crores during the year. The total Government borrowings as on 31-3-80 amounted to Rs. 718.53 crores as against Rs. 730.96 crores as on 31-3-79. In addition the company also received a loan of Rs. 158 crores from the Steel Development fund. An amount of Rs. 5.67 crores was paid by the Government as grant-in-aid during 1979-80 for Research and Development.

3.1.4 The Company's investments as on 31-3-80 were as under :—

<i>Subsidiaries</i>	<i>Rs./crores</i>
(i) IISCO	59.28
(ii) Metal Scrap Trade Corporation Limited	0.32
<i>Other companies</i>	
VISL	15.78
Indian Potash Limited	0.02
Belpahar Refractories Limited	1.12
Almora Magnesite Limited	0.28

3.1.5 The gross turn over of the company during the year 1979-80 was Rs. 1873.79 crores as against Rs. 1498.14 crores during 1978-79. The gross profit, before providing for interest in fixed loans and investment allowance reserves, was Rs. 90.62 crores as against Rs. 131.07 crores in the previous year. The net profit of the company amounted to Rs. 8.35 crores in 1979-80 as against Rs. 43.94 crores in 1978-79. The working results for various units of the Company are as below :—

	Rs./crores
Bhilai Steel Plant	(+) 39.53
Durgapur Steel Plant	(—) 20.00
Rourkela Steel Plant	(+) 47.65
(including Fertiliser Plant)	
Bokaro Steel Plant	(—) 34.15
Alloy Steels Plant	(—) 0.15
Central Coal Washeries Organisation	(+) 0.76
Bolani Ore Mines	(—) 2.42
Provision for contingencies	(—) 22.87
investment allowance reserve etc.	
Total	(+) 8.35

Public Deposit Scheme

3.1.6 With a view to mobilise resources, Steel Authority of India Limited have been permitted by the Government to invite deposits from the public under the Companies (Acceptance of Deposits) Rules, 1975. Accordingly Steel Authority of India started accepting deposits from public from July, 1980 under the following two scheme :—

- Fixed deposits for one year, two years and three years; and
- Cumulative Deposits for three years.

The response to the schemes has been quite encouraging.

Production Performance

3.1.7 The table below indicates the capacity and actual production of the various units of the Company (including 11 SCO) in 1979-80 and 1980-81 :—

(000 tonnes)

Plant	Annual Capacity	Production		Actual April—Dec. 80
		1979-80 Actual Ingot Steel	1980-81 Target	
Bhilai Steel Plant	2500	2108	2200	1461
Durgapur Steel Plant	1600	882	1070	516
Rourkela Steel Plant	1800	1268	1460	857
Bokaro Steel Plant	2500	1426	1820	621
IISCO	1000	565	670	436
TOTAL	9400	6249	7220	3891
Alloy Steels Plant	100	76.72	90	50.75
		Saleable Steel		
Bhilai	1965	1706	1830	1292
Durgapur	1239	604	855	394
Rourkela	1225	1045	1080	665
Bokaro	2000	849	1500	544
IISCO	800	430	530	373
TOTAL	7229	4592*	5770*	3260*
ASP	60	45.68	46.6	27.97
		Calcium Ammonium Nitrate		
Rourkela Steel Plant	459	211	230	85

3.1.8 The total production of saleable steel at the integrated steel plants of SAIL during 1980-81 is expected to be 4.593 million tonnes which would be marginally higher than 1979-80 actuals of 4.592 million tonnes. As compared to the target, the anticipated output would be lower by 20.4%. Similarly, the total likely production of ingot steel during 1980-81 is expected to be 5.320 million tonnes as against 6.249 million tonnes during 1979-80. It would be short by 14.9% as compared to the previous year and by 26.3% as compared to the target. The overall capacity utilisation during 1980-81 in terms of ingot steel is expected to be 56.6% and in terms of saleable steel at 63.5%. The capacity utilisation for saleable steel is expected to increase from 86.8% in 1979-80 to 89.7% in 1980-81 at Bhilai and from 53.8% in 1979-80 to 65.1% in 1980-81 at IISCO. The main constraints hampering production were: (i) severe restrictions/fluctuations/interruptions in the supply of power from the public utilities, namely, DVC, MPEB,

*Excludes transfer of HR Coils from Bokaro to Rourkela.

OSEB affecting the rolling mills in all the plants and (ii) continued problems in the supply of coking coal from indigenous sources both in quantity and quality. As a result, the steel plants had been forced to restrict the pushing of ovens with a view to match the coal consumption with the availability, thus limiting the hot metal production.

3.1.9 To secure better supplies of power and good and sufficient quantity of coking coal, close liaison continues to be maintained with the Ministry of Energy, DVC, the State Electricity Boards, Coal India Limited and the Railways. The position regarding supply of these essential inputs is being reviewed regularly by a high powered committee and improvements are effected to the extent possible. To improve the availability of low ash coking coal import of coking coal has been arranged to supplement the indigenous supplies. Imported coal to the extent of 0.53 million tonnes is likely to be available to the Steel plants by the end of the year. An additional 1 million tonne is also expected. For improving supply of power, generation from captive units of the steel plants is being maximised and the new schemes sanctioned for augmenting captive power generation are being expedited.

Industrial Relations

3.1.10 The industrial relations situation was generally satisfactory. However, 144,994 mandays were lost during the period April-December, 1980, due to labour troubles in Bhilai, Durgapur, Rourkela and Bokaro Steel Plants, Alloy Steels Plant, Durgapur and the Burnpur Plant of Indian Iron and Steel Company Limited, as compared to the loss of 108,661 mandays in 1979-80. However, the loss of production of saleable steel on this account during the above period was 21,945 tonnes against 76,945 tonnes in 1979-80.

3.1.11 The plants have established a grievance procedure for redressal of personnel grievances of the employees. Besides a net work of Joint Participative Machineries are functioning to secure closer association of Workers in decision making on matters of mutual concern, such as production and productivity, safety, welfare, etc. in the plants. The regular meetings of the National Joint Consultative Committee for Steel Industry (NJCCI) and the Joint Meetings of SAIL on Production and Productivity at the Corporate level of Steel Authority of India Limited have also contributed to the consolidation of trend towards industrial peace and harmony in the public sector steel plants.

Personnel

3.1.12 The total number of employees of the Company and its subsidiaries (including IISCO) as on 31-12-1980 indicating separately, Scheduled Caste, Scheduled Tribes and Women are given below :

Group	Total No. of employees as on 31-12-80	Scheduled Castes	Scheduled Tribes	Women Employees
SAIL				
Group—A	14,332	254	98	199
Group—B	12,391	896	162	620
Group—C	1,59,919	17,715	16,069	8,464
(excluding Sweepers)				
Group—C (Sweepers)	4,278	3,232	197	853
TOTAL :	1,90,920	22,097	16,526	10,136

Subsidiaries (including IISCO)

Group—A	1,517	13	6	26
Group—B	2,420	178	26	18
Group—C	38,421	5,773	2,391	1038
(excluding sweepers)				
Group—C (Sweepers)	930	915	—	242
TOTAL :	43,288	6,879	2,423	1,324

Capital Schemes

Bhilai Steel Plant

3.1.13 The work on the expansion of the steel plant from 2.5 to 4.00 million tonnes stage is in progress. Due to some delays on the civil and structural erection works, the project is now expected to be commissioned in October, 1982, except the 7th Blast Furnace complex which is scheduled to be commissioned by June, 1983. The revised cost of the expansion programme is presently estimated at Rs. 1422.50 crores against an approved estimate of Rs. 937.7 crores.

The schemes of Dalli Mechanised Mines and 8th Coke Oven Battery have already been implemented and one machine in

the sintering plant No. II has also been commissioned. The second machine is ready for commissioning.

Certain schemes for the incorporation of technological improvement/innovations and revamping of the old plant units so as to increase the productivity, are under consideration.

During 1979-80 a total expenditure of Rs. 192.47 crores including Rs. 174.04 crores on 4 million tonnes expansion was incurred on the capital schemes at Bhilai.

Bokaro Steel Plant

3.1.14 The expansion of Bokaro Steel Plant from 1.7 to 4 million tonnes stage is being pursued. There have been some delays in the completion of the scheme due to slippages in civil works and equipment supplies. The project is now expected to be completed by June, 1982. The cold rolling mills complex is expected to be commissioned by September, 1983. The revised cost for this project is estimated at Rs. 1279.43 crores against the sanctioned estimates of Rs. 947.24 crores.

With a view to obtaining maximum output from facilities being installed at 4 million tonnes stage, further expansion of this plant to a capacity of 4.75 million ingot tonnes at an estimated cost of Rs. 186.59 crores is under consideration of the Government.

The scheme sanctioned for augmenting captive power generation by 3×60 MW at an estimated cost of Rs. 75.94 crores is under implementation. Orders for major plant and equipment have been placed and civil works are in progress. The first unit is due to be commissioned by September, 1982 and the remaining two at intervals of six months thereafter. The revised cost estimates for the project are Rs. 106.16 crores.

The Meghahatuburu Iron ore project designed to produce 1.3 million tonnes of lump ore and 2.66 million tonnes of fines to meet the requirement of second stage of Bokaro is now likely to be completed by December, 1982. The revised cost of the scheme is estimated at Rs. 92.27 crores against the sanctioned cost of Rs. 51.39 crores. The commissioning of the aerial ropeway for transportation of coal from Dugda to Bokaro is expected shortly.

An expenditure of Rs. 148.15 crores including Rs. 124.26 crores on expansion to 4 million tonnes stage, was incurred on capital schemes at Bokaro Steel Plant during 1979-80.

Durgapur Steel Plant

3.1.15 The schemes for providing certain balancing facilities in the Wheel and Axle Plant at an estimated cost of Rs. 4.06 crores to increase the capacity from 40,000 to 50,000 Wheel sets per year is under progress and is expected to be completed in June, 1981.

The replacement of two hammer mills by high speed reversible hammers for the coke ovens at a cost of Rs. 4.80 crores has been undertaken. The scheme is scheduled to be commissioned by September, 1982.

A scheme for the installation of balancing facilities in CEM shop at an estimated cost of Rs. 3.57 crores is in progress.

The scheme sanctioned for augmenting captive power generation facilities by 2×60 MW for Durgapur Steel Plant and Alloy Steels Plant at an estimated cost of Rs. 54.90 crores is progressing according to schedule. The first unit is likely to be commissioned in September, 1982 and the second six months thereafter. The revised cost estimates of the project are Rs. 80.69 crores.

Installation of coke cutting facilities at Coke Ovens at a cost of Rs. 4.89 crores has been approved and is under implementation. The scheme is expected to be completed by April, 1982.

The British Steel Corporation (Overseas Services) Limited who were commissioned to prepare a development plan for the modernisation/expansion of the plant have submitted their report which is under consideration of SAIL.

Durgapur Steel Plant incurred an amount of Rs. 15.89 crores on its capital schemes during 1979-80.

Rourkela Steel Plant

3.1.16 The silicon steel project to produce 37,500 tonnes of cold rolled grain oriented sheets and 36,000 tonnes of cold rolled non-grain oriented sheets per annum at an estimated cost of Rs. 109.73 crores is at various stages of implementation. The project is likely to be commissioned by January, 1982.

4-1241 Steel/80

The modernisation of the hot strip mill entrusted to MECON as a turnkey job at a cost of Rs. 29.95 crores was completed in August, 1980 and the revamped mill has started production.

The second naphtha reforming unit of 180 tonnes per day capacity being installed at an estimated cost of Rs. 18.60 crores to augment the supply of coke oven gas to the Fertiliser Plant has been put on trial runs.

A scheme to set up a slag cement plant to gainfully utilise the arising of BF Slag from Rourkela Steel Plant and Bhilai Steel Plant is under consideration. The scheme is estimated to cost Rs. 120 crores.

With a view to augmenting captive generation of power at Rourkela, proposal to set up a captive power plant of 120 MW capacity at an estimated cost of Rs. 80 crores is under consideration.

Rourkela Steel Plant incurred a total expenditure of Rs. 59.94 crores on capital scheme during 1979-80.

Alloy Steels Plant

3.1.17 The first stage expansion of the plant estimated to cost Rs. 9.31 crores, raising its capacity from 100,000 to 160,000 tonnes per year of ingot steel is under execution. Due to delays in the supply of imported equipment and in the fabrication and erection of structurals, the scheme is now expected to be completed by July, 1981.

A scheme for modernisation of the plant by induction of improved melting and casting technology at an estimated cost of Rs. 58 crores is under consideration of the Government. The scheme is designed to improve the quality of production and to reduce the production cost while increasing the capacity to 260,000 tonnes of liquid steel.

Salem Steel Plant

3.1.18 The execution of first stage of the plant to produce 32,000 tonnes per year of cold rolled stainless steel sheets and strips is progressing satisfactorily. The scheme is scheduled to be commissioned by September, 1981.

Expenditure incurred during the year for the period ending December, 1980 is Rs. 36.50 crores and cumulative expenditure so far is Rs. 96.25 crores.

The modernisation of the hot strip mill entrusted to MECON as a turnkey job at a cost of Rs. 29.95 crores was completed in August, 1980 and the revamped mill has started production.

The second naptha reforming unit of 180 tonnes per day capacity being installed at an estimated cost of Rs. 18.60 crores to augment the supply of coke oven gas to the Fertiliser Plant has been put on trial runs.

A scheme to set up a slag cement plant to gainfully utilise the arising of BF Slag from Rourkela Steel Plant and Bhilai Steel Plant is under consideration. The scheme is estimated to cost Rs. 120 crores.

With a view to augmenting captive generation of power at Rourkela, proposal to set up a captive power plant of 120 MW capacity at an estimated cost of Rs. 80 crores is under consideration.

Rourkela Steel Plant incurred a total expenditure of Rs. 59.94 crores on capital scheme during 1979-80.

Alloy Steels Plant

3.1.17 The first stage expansion of the plant estimated to cost Rs. 9.31 crores, raising its capacity from 100,000 to 160,000 tonnes per year of ingot steel is under execution. Due to delays in the supply of imported equipment and in the fabrication and erection of structurals, the scheme is now expected to be completed by July, 1981.

A scheme for modernisation of the plant by induction of improved melting and casting technology at an estimated cost of Rs. 58 crores is under consideration of the Government. The scheme is designed to improve the quality of production and to reduce the production cost while increasing the capacity to 260,000 tonnes of liquid steel.

Salem Steel Plant

3.1.18 The execution of first stage of the plant to produce 32,000 tonnes per year of cold rolled stainless steel sheets and strips is progressing satisfactorily. The scheme is scheduled to be commissioned by September, 1981.

Expenditure incurred during the year for the period ending December, 1980 is Rs. 36.50 crores and cumulative expenditure so far is Rs. 96.25 crores.

Visakhapatnam Steel Project

3.1.19 The setting up of an integrated steel plant at Visakhapatnam with a capacity of about 3.4 million tonnes of liquid steel to be completed in two over-lapping stages was sanctioned by the Government in June, 1979. The project was estimated to cost about Rs. 2,256 crores including foreign exchange component of Rs. 500.20 crores. The Soviet Government have extended technical and financial assistance for implementation of this project. The Detailed Project Report prepared earlier by M/s. M. N. Dastur and Company (Private) Limited has been revised to suit the Russian technology. The comprehensive Detailed Project Report has been received and is under examination. The first stage of the project is scheduled to be completed in four years from the start of its construction and the second stage two years thereafter. The work at the site on various pre-constructional and infra-structural facilities including site levelling work is in progress. An amount of Rs. 12.32 crores was spent on the project during 1979-80.

M/s. M. N. Dastur and Company (P) Limited have been appointed as principal consultants for the project.

Vijayanagar Steel Project

3.1.20 As decided by the Public Investment Board in October, 1973, SAIL commissioned M/s. Metallurgical and Engineering Consultants India Limited (MECON), consultants for preparing DPR for Vijayanagar Steel Project. The DPR was examined by a high level Technical Committee of SAIL. After detailed consideration of the recommendations of the Technical Committee, SAIL felt the need for further exercises in order to improve the economic viability of the project. Accordingly, SAIL have asked MECON to study the feasibility of alternative technologies, the product-mix to suit the regional pattern of demand of steel, the latest development regarding sizes of equipment etc. MECON's preliminary report has been received by SAIL and a final report is awaited.

Research and Development

3.1.21 The Research & Development Centre of SAIL continues to work for the development of a number of projects in the major areas like coal, coke, raw-materials, iron making, steel making, mechanical working of metals, product development, refractories, computerisation, thermal engineering, direct reduction, etc.

At present the centre is actively engaged, jointly with the steel plants, in implementation of more than 70 projects in various technological areas relevant to the steel industry. The projects completed so far have yielded encouraging results.

To meet the diagnostic and analytical needs of the R&D projects, the setting up of a Laboratory Complex at Ranchi at a cost of Rs. 15.10 crores has been approved. The complex is expected to be completed in phases by 1983-84. An Information and Documentation Centre is also being set up along with the Laboratory Complex.

Major projects taken by the R&D Centre and the results achieved are as follows:—

Technology for use of non-coking coal in coal blend for production of coke with a view to conserve the limited coking coal reserves in the country has been developed. Installation of facilities for briquetting and pre-heating of coal charge in SAIL Plants for adoption of these technologies is under consideration.

Technology for production of cold bonded pellets for use in Blast Furnaces has been developed. The new technology will require less energy and avoid heavy capital investment as compared to the conventional heat hardening process of pelletisation.

Design and technology for Lime Dust Injection into Blast Furnaces has been developed and a unit commissioned at Kalinga Iron Works. The technology is now being upscaled for use in one of the blast furnaces at Durgapur Steel Plant.

Technology for production of non-silicon electrical steel has been developed at Rourkela Steel Plant which is suitable for Motors and Starters of low horse power. Commercial production has started at the plant.

The technology for production of high strength low alloy (HSLA) joists angles, channels, etc., has been developed at Durgapur Steel Plant. Commercial production has commenced and materials are being supplied to customers.

Technology for production of semi-killed non-aging deep drawing quality steel has been developed. Commercial production has commenced at Rourkela Steel Plant for meeting the market demand.

The new technique, namely, thermographic survey has been introduced at steel plants which is helping in scheduling for preventive maintenance of blast furnaces, hot metal mixer, gas pipe lines, etc. The plants are thus being assisted to avoid the unnecessary downtime in the above units.

Direct Reduction Technology

3.1.22 The proposal of the R&D Centre for setting up a pilot plant at Ranchi for the development and adoption of Rotary Kiln direct reduction process technology for production of Sponge Iron at an estimated cost of Rs. 4.7 crores has made considerable progress. The pilot plant is scheduled to be commissioned by November, 1981. Pilot facilities are also planned for development of technology using shaft reactor and report system.

Some of the other important projects being pursued by the R&D Centre are indicated below:—

- (i) Beneficiation of iron ore using a polymer for preferential removal of alumina, thereby increasing the productivity of Blast Furnaces coupled with lower coke rate.
- (ii) De-sulphurisation/de-siliconisation of Hot Metal outside Blast Furnace developed at Kalinga Iron Works and Durgapur Steel Plant.
- (iii) Coal dust injection in Blast Furnace Tuyeres of Bhilai Steel Plant.
- (iv) Use of super basic sinter for improving the lining life of L.D. Converters.
- (v) Computerisation of L. D. Operation of Rourkela Steel Plant.
- (vi) Development of hammers for—
 - (a) Limestone/Dolomite crushers of Sinter Plant, and
 - (b) Coal crushers in Coke Oven at Durgapur Steel Plant.
- (vii) Improving fuel combustion efficiencies in Soaking Pit of Steel Plants.

The Centre is closely associated with the modernisation programmes of Bhilai and Durgapur Steel Plants.

The total expenditure on the Centre during 1979-80 was Rs. 3.50 crores as against Rs. 2.02 crores in the previous year.

Indian Iron and Steel Company Ltd.

3.1.23 The Indian Iron and Steel Company Limited (IISCO) comprises an integrated Iron and Steel Plant of one million tonnes ingots steel capacity at Burnpur, ferrous and non-ferrous foundries and two spun pipe plants at Kulti, collieries at Chasnalla, Noondih-Jitpur and Ramnagore, iron ore mines at Gua and Chiria (Manoharpur) and phosphate rock mines at Pathergorah. IISCO also has subsidiary, namely IISCO Stanton Pipe & Foundry Company Limited at Ujjain (M.P.) which makes cast iron spun pipes.

Takeover of the management of IISCO by the Government.

3.1.24 In view of the continuing decline in the production of steel and mis-management of the affairs of the company, the management of the Indian Iron & Steel Company Limited was taken-over by the Government of India w.e.f. 14th July, 1972, initially for a period of 2 years, which was later extended to 5 years. Immediately after takeover of the management, a Plant Rehabilitation Scheme (PRS) was launched to restore the technical health of the plant. A ten-year programme of capital reconstruction was also initiated in order to sustain production at the rated level. As these programmes called for massive investment, it was subsequently decided to acquire all the privately held shares of the company, except the holdings of Government Institutions. This was done through the Indian Iron & Steel Company (Acquisition of Shares) Act, 1976 (89 of 1976). This acquisition gave the Central Government a majority holding of the ordinary and preference shares issued by the company. Later, it was decided by the Government that in order to ensure co-ordinated development of IISCO and for better management of its technical, production and financial problems, IISCO should be amalgamated with the Steel Authority of India Limited like the other integrated Steel Plants in the public sector. As the first step in this direction, the shares in IISCO held by the public financial institutions, nationalised banks and insurance companies and State Governments were purchased by the Central Government. Full ownership of IISCO was

thereafter transferred to SAIL. A proposal to amalgamate the two companies in terms of Section 396 of the Companies Act is presently under consideration of the Company Law Board.

Finance

3.1.25 The authorised capital of the company as on 31-12-80 was Rs. 100 crores and the paid up capital Rs. 86.32 crores. In addition, outstanding Government loans as on 31-12-1980 were Rs. 62.23 crores.

Production

The following table indicates the production of ingots and saleable steel in IISCO from 1974-75 to 1980-81 (upto December, 1980) :—

Year	Ingot Steel ('000 tonnes) (Rated capacity 1 MT)	Saleable Steel (in '000 tonnes) (Rated Capacity 0.8 MT)
1974-75	532	415
1975-76	630	500
1976-77	667	542
1977-78	651	506
1978-79	628	481
1979-80	565	430
1980-81	436	373

(April—Dec., 80)

The decline in production after 1976-77 was largely due to inadequate availability and poor quality of coking coal, shortage of and restrictions on power supply, industrial relations problems etc.

Working Results

3.1.27 The table below indicates the working results of the company from 1974-75 onwards :

Year	Profit/Loss (Rs. in crores)
1974-75	(+) 1.05
1975-76	(-) 5.60
1976-77	(-) 16.25
1977-78	(-) 39.13
1978-79	(-) 24.31
1979-80	(-) 43.55*

*The accounts have not yet been audited.

The main reasons for the continuing losses incurred by the company are low capacity utilisation, obsolete technology in certain areas, heavy interest burden and high operating costs.

Capital Schemes

3.1.28 The Plant Rehabilitation Scheme (PRS) estimated to cost Rs. 58 crores is nearly complete. Important capital schemes under implementation are the construction of a new Coke Oven Battery at a cost of Rs. 27 crores and the installation of a Box Wagons Tippler. Work is also in hand to re-construct Jitpur Colliery and to rehabilitate the Chasnalla deep mine.

IISCO Stanton Pipe and Foundry Company Ltd.

3.1.29 IISCO Stanton Pipe and Foundry Company Limited is a subsidiary company of IISCO in which IISCO hold 66 2/3% of the issued equity capital. This company makes cast iron spun pipes and castings of various dimensions.

During the year ending 31st December, 1980, the Company produced 36,692 tonnes of pipes as against 39,062 tonnes during the year 1979. The production in 1980 was lower because of a prolonged strike in the first quarter of 1980, power shortage and inadequate availability of pig iron and ferro silicon. The Company earned a profit of Rs. 45.67 lakhs (provisional—figure before tax) during the year 1980.

Metal Scrap Trade Corporation Limited

3.1.30 Metal Scrap Trade Corporation Limited, a subsidiary of Steel Authority of India Limited continued to be the canalising agency for import of ferrous melting scrap and old ships for breaking. In addition, as an experimental measure, it was entrusted with the import of 8,000 tonnes of heavy melting scrap including re-rolls for segregation and sale at a reduced rate of duty, to heal the market. MSTC is also responsible for overseeing the operation of Ferro Scrap Nigam Limited in which it has 60 per cent equity participation. It is the sole-selling agent for some categories of ferrous scrap and some of the by-products generated by the integrated steel plants namely: IISCO, Rourkela, Durgapur, Bhilai and Bokaro Steel Plants.

During April-December, 1980, MSTC imported 29 vessels for breaking. The total LDT involved was 107,166 valued at Rs. 15.74 crores. The comparable import during April

December, 1979 was 55,098 LDT valued at Rs. 7.31 crores. Direct import of ferrous melting scrap was also allowed during 1980-81, to such of the furnace units which had fully utilised the import facilities allowed to them in the past or had made genuine efforts in this direction. Import of melting scrap during 1979-80 was 98,136 tonnes. Against this, during April-December, 1980 MSTC imported 24,853 tonnes valued at Rs. 3.41 crores against ordering for 62,000 tonnes. In addition, MSTC imported 615 tonnes of stainless steel scrap.

MSTC has also been the canalising agency for export of ferrous scrap. During 1980-81, the ferrous scrap export continued to be very limited due to demands within the country. Only such categories and quantities of scrap which are surplus to the requirements within the country are allowed to be exported. Exports during April-December, 1980 were 21,154 tonnes valued at Rs. 29.84 lakhs as against 32,786 tonnes valued at Rs. 178.8 lakhs during April-December, 1979. The financial performance of MSTC during 1980-81 continued to be satisfactory.

Ferro Scrap Nigam Limited

3.1.31 Ferro Scrap Nigam Limited the joint sector company in which MSTC has 60% equity participation, the remaining 40% being held by M/s. Harsco Corporation incorporated, U.S.A., has been operating steadily in the field of recovery of metallics from the slag/refuse dump in the steel plants at Jamshedpur, Rourkela and Burnpur. During April-December, 1980, the recovery added upto 2,80,790 tonnes as against 2,58,345 tonnes during April-December, 1979.

North Bengal Dolomite Limited

3.1.32 SAIL have formed a joint sector company, namely, the North Bengal Dolomite Limited in collaboration with the West Bengal Mineral Development and Trading Corporation limited, a wholly owned State Government Undertaking, for ensuring adequate supplies of dolomite to the Durgapur Steel Plant. The share capital in the new company is to be contributed equally by SAIL and the State Government undertaking. The authorised capital of the new company would be Rs. 2 crores and the subscribed capital Rs. 24 lakhs. The company was registered on 4-10-1980.

Bolani Ore Mines

3.1.33 The writ petition filed by M/s. Orissa Minerals Development Corporation challenging the validity of the Bolani Ores

Limited (Acquisition of Shares) and Miscellaneous Provisions Act, 1978, is still pending for final disposal by the Supreme Court. In the meantime, Bolani Ore Mines is functioning as a unit under Durgapur Steel Plant of SAIL.

3.2 VISVESVARAYA IRON AND STEEL LIMITED : BHADRAVATI

3.2.1 The Mysore Iron and Steel Works, Bhadravati, was started in 1923 as a Departmental undertaking of the State Government with a small blast furnace to produce about 24,500 tonnes of pig iron annually. It was converted into a company on 30th June, 1961 under the name of Mysore Iron and Steel Limited. In February, 1976, its name was changed to Visvesvaraya Iron and Steel Limited. It is now jointly owned by the Government of Karnataka and the Govt. of India (through Steel Authority of India Limited). It is one of the main Producers of alloy and special steels in the country. Other products of the company are mild steel, ferro silicon, cement, castings, spun pipe and ferro alloys.

3.2.2 The authorised capital of the company is Rs. 50 crores and the subscribed and paid up capital as on 31-3-80 was Rs. 39.45 crores of which Rs. 23.67 crores (60 per cent) was held by the Government of Karnataka and the balance of Rs. 15.78 crores by Steel Authority of India Limited.

3.2.3 The present installed capacity of the several units is as under:—

	tonnes
1. Mild Steel	
2. Special Steel	48,000
3. Steel Ingots	72,000
4. Ferro Silocon	1,80,000
5. Cement	20,000
6. Ferro Alloys	96,000
7. Pig Iron	3,800
8. Steel Castings	1,80,000
9. Gray Iron Castings	2,500
10. Cast Iron Spun pipes	15,600
11. Cast Iron Plate Sleepers	17,000
12. Refractories	15,000
	9,600

Actual Production

3.2.4 The actual production for the year 1979-80 and 1980-81 (upto the end of December, 1980) is given below:—

Product	Actual Production	
	1979-80	1980-81 (From 1st April to 31st December, 1980).
1. Mild Steel	28,987	16,930
2. Special Steel Met. OK	64,213	34,495
3. Steel Ingots	113,190	72,837
4. Ferro Silicon	8,564	9,625
5. Cement	87,004	54,312
6. Ferro Alloys	1,686	1,903
7. Pig Iron	69,358	61,073
8. Steel Castings	2,034	1,022
9. Gray Iron Castings	8,891	6,993
10. Casting Iron Spun Pipes	921	—
11. Refractories	6,364	7,093

3.2.5 The supply of power to the plant has been very unsatisfactory during the year 1979-80. The power cut varies from 20% to 72.5% and on one day it was 100%. The power position during the current year 1980-81 is also not satisfactory. It was slightly better compared to the position during 1979-80 since the present power cut is 33.13% the power cut at the beginning of April 1980-81 was around 72.5%.

Working Results

3.2.6 The sales turnover during the years 1979-80 and 1980-81 was Rs. 7873.97 lakhs and Rs. 9269 lakhs (provisional) respectively.

CAPITAL SCHEMES

Forge Plant

3.2.7 A Forge Plant for the manufacture of high grade and high value steel at an estimated cost of Rs. 16.65 crores has already been installed. The Plant designed to produce 13,300 tonnes of Steel ingot to yield 5,350 tonnes of finished forged products and 2,900 tonnes of semis to be rolled into 2,230 tonnes

of finished rolled product had gone into production in October, 1978.

Vacuum Degassing (VD)/Vacuum Oxygen Decarburisation (VOD) Unit

3.2.8 For producing quality ingots for the Forge Plant a VD/VOD unit is being installed. The estimated cost of the project is Rs. 212 lakhs. The unit is expected to be commissioned shortly.

Ferro Vanadium Project

3.2.9 The project for the production of 100 tonnes of Ferro vanadium per year estimated to cost of Rs. 45 lakhs, is to be financed by the Government of India through loans. A sum of Rs. 20 lakhs had already been released by the Government.

Balancing Facilities

3.2.10 The company has formulated a proposal, at an estimated cost of Rs. 36 crores, for installation of balancing facilities to optimise its production. This is to be completed in two stages. However, the Steel Authority of India Ltd., have approved only the installation of one Continuous casting Machine, with related facilities, at an estimated cost of Rs. 8.50 crores. Steel Authority of India Ltd., have agreed to contribute 40% of the cost of the project i.e. Rs. 3.40 crores and the balance 60% i.e. Rs. 5.10 Crores will be financed by the State Government of Karnataka. A report prepared by MECON is at present under consideration of Government.

3.3 SPONGE IRON PLANT AT KOTHAGUDEM IN ANDHRA PRADESH

3.3.1 The production of sponge iron within the country has assumed national importance for two reasons (a) the limited stocks of coking coal within the country and (b) the limited availability of indigenous steel melting scrap. It is estimated that the existing reserves of coking coal, used in production of steel through the blast furnace route, may last for about forty years only. There is, therefore, an urgent need to sustain a high level of production through the electric arc furnace route, which utilises ferrous melting scrap as the raw material. While intensive research in the direction of using non-coking coal for steel making is necessary, the capacity already created in the electric arc furnace route should be fully utilised, and expanded as more

power becomes available, to conserve the dwindling reserves of coking coal. One of the major constraints in the greater utilisation of the over 3 million tonnes capacity created already in electric arc furnaces, apart from availability of power, is the limited availability of indigenous steel melting scrap which is its raw material. It has been found by a committee appointed by the Government, on which the electric furnace industry and the scrap collecting/processing industry were both represented, that the availability of the indigenous melting scrap is just sufficient to sustain a production of 1.5 to 1.6 million tonnes of steel ingots by the electric furnaces. An alternate raw material which can supplement the ferrous melting scrap is sponge iron. Hence the importance that its production within the country has assumed in the context of the future of the steel industry in this country.

3.3.2 Sponge Iron India Limited, a public sector Company, has set up a sponge iron demonstration plant with a capacity of 30,000 tonnes per annum with UNDP/UNIDO assistance at Kothagudem in Andhra Pradesh. Keeping in view that no indigenous or foreign technology had till then been developed to an extent that it could be commercially exploited, it was decided to set up a demonstration plant with SL/RN technology. One of the reasons for choosing this technology was that it was based on the use of non-coking coal while another strong contender, Allis Chalmers' technology, used oil to some extent.

3.3.3 Messers Lurgi Chemie of West Germany were awarded the contract for supply of imported equipment, engineering and personnel services. The civil and construction work of the plant was completed as per schedule.

3.3.4 Initially, the Andhra Pradesh Government had conceived of this project as part of a steel complex to be created at Kothagudem but subsequently they requested the Central Government to share its cost. The equity contribution of the Andhra Pradesh Government and the Central Government was agreed to be Rs. 1.50 crores and Rs. 1.70 crores respectively. After paying Rs. 84 lakhs, the Andhra Pradesh Government expressed their inability to contribute further amount. Therefore, the balance has to be paid by the Central Government and thus the control of this project has passed into the hands of the Central Government.

3.3.5 This is the biggest effort of UNIDO in any country and they have been intimately associated with the setting up of this plant from the very beginning. It was on the advice of a

UNDP team that the Andhra Pradesh Government dropped their proposal of producing pig iron from low grade ores, and decided instead to set up a sponge iron plant. As the construction progressed, UNIDO brought to the Government of India notice the interest evinced by other nations in this project. It was also reported that a number of countries may be interested in using the facilities provided at this plant to get their raw materials tested to enable them to judge whether they could also set up sponge iron plants. A well-equipped laboratory has been set up at plant site to carry out these tests. Sponge Iron India Limited have also been registered as 'Industrial Consultancy and Testing Centre' by UNIDO.

3.3.6 The plant was commissioned in July, 1980. Even during the trial runs, the plant achieved its rated capacity of 100 tonnes per day. The plant has been running without the use of oil since November, 1980. The metallisation, which should have been a minimum of 92% according to the contract, has been varying between 92 to 96%. Although the plant is using low grade iron ore containing 60 to 61% iron, the sponge produced from it has about 88% iron content. The steel produced from this sponge iron in various furnaces has indicated that the quality of steel produced is better than that produced when all scrap is used. The reports from the rolling mills also indicate that they have found it easier to roll steel produced out of this sponge iron.

3.3.7 Against a capacity of 3000 tonnes per month, the plant has already received orders for supply of about 24,200 tonnes per month of sponge iron. This is expected to go up further. In the light of this encouraging response, doubling the capacity of the plant is under consideration.

3.3.8 The total number of employees of the Company as on 31-12-1980 indicating separately, Scheduled Castes, Scheduled Tribes and Women are given below :—

Group	Total No. of employees	Scheduled Castes	Scheduled Tribes	Women
Group A				
Group B	41	2	—	—
Group C	15	1	—	—
Group D	71	1	—	—
(excluding sweepers)	39	8	2	7
Group D (Sweepers)	3	2	—	—
TOTAL :	169	14	2	8

3.4 BHARAT REFRACTORIES LIMITED

3.4.1 Bharat Refractories Limited was registered on 22nd July, 1974, as a wholly owned subsidiary company of Bokaro Steel Limited with an authorised capital of Rs. 2 crores. Only one refractories plant located at Bhandaridah was under the control of Bharat Refractories Limited upto 30-4-1978. Consequently upon the restructuring of Steel Authority of India Ltd. in accordance with the provisions of the Public Sector Iron and Steel Companies (Restructuring and Miscellaneous Provisions) Act, 1978, the following units were transferred to Bharat Refractories Limited with effect from 1-5-1978.

- (i) HSL, Refractories Plant at Marar (now known as Ranchi Road Refractories Plant).
- (ii) Sillimanite Mines in Meghalaya.
- (iii) The Refractories Plant of HSL located at Bhilai (now known as Bhilai Refractories Plant).
- (iv) India Firebricks and Insulation Company Limited (which was subsidiary of SAIL) has been made a subsidiary of Bharat Refractories Limited w.e.f. 1-5-78).

Finance

3.4.2 The authorised capital of Bharat Refractories Limited is Rs. 30 crores and the present paid up capital is Rs. 17.5754 crores. The capital expenditure of the company upto 31-12-80 was Rs. 48.5253 crores.

Production

3.4.3 The production of various units including that of India Firebricks and Insulation Company Limited during the period

1979-80 and 1980-81 (upto December, 1980) is indicated below :—

Item	1979-80		1980-81	
	Target Qty. MT	Actual Qty. MT	Target Qty. MT	Actual Qty. MT
Bhandaridah Refractories Plant				
Bricks	12616	10647	9423	4088
Mortar	5105	3983	3862	1118
Ranchi Road Ref. Plant				
Bricks	5670	4673	5847	3726
Mortar	240	214	350	235
TOTAL :	23631	19517	19482	9167
India Firebricks & Insulation Co. Ltd.				
Bricks	32864	28903	36000	23213
Mortar	1022	1883	—	1027
GRAND TOTAL :	57517	50303	55482	33407

3.4.4 The main reason for lower production during 1980-81 (upto December, 1980) as compared to the target in the Bhandaridah Refractories Plant was an illegal strike by workers from 19-5-80 and subsequent lockout of the Plant from 7-6-80 to 24-7-80. There was also some shortage of calcined clay Gr. A and coal and the poor quality of coal affected the firing of the kilns.

3.4.5 At Ranchi Road Refractories Plant, due to breakdown of a compressor, firingtime was prolonged from July, 1980 to September, 1980 in two kilns. Supply of furnace oil to the plant was irregular which also affected normal production due to the disturbed situation in the North Eastern region and shortage of diesel oil, the supply of sillimanite from Meghalaya was also irregular.

3.4.6 At the subsidiary company IFICO, production was affected due to a lightning strike by the workers for six days in April and the break down of one of the tunnel kiln.

3.4.7 Inadequate supply of power and frequent power failure also affected production adversely in all the units.

3.4.8 The position of despatches during 1979-80 and 1980-81 is given below :—

Unit	Item	1979-80		1980-81 (Provisional)	
		Target	Actual	Target	Actual
A. Bhandaridah Ref. Plant	Bricks Mortar	12025 5000	10873 3706	9986 3873	3211 721
B. Ranchi Road Ref. Plant	Bricks Mortar	5977 240	4593 207	5921 300	3438 125
TOTAL		23242	19379	20080	7495
C. IFICO	Bricks Mortar	35027 1278	31243 1600	35700 —	22085 1382
GRAND TOTAL		59547	52222	55780	30862

Working Results

3.4.9 The Company incurred a net loss of Rs. 96.59 lakhs during 1979-80 after providing for depreciation and interest against the loss of Rs. 70.57 lakhs in 1978-79. The subsidiary company IFICO incurred a loss of Rs. 62.67 lakhs during 1979-80 after providing for depreciation and interest against a loss of Rs. 27.86 lakhs during 1978-79.

Number of Employees

3.4.10 The man power position as on 31-12-1980 in different units/subsidiary was as follows :—

	Total	SC	ST
1. Bhandaridah Ref. Plant	749	103	61
2. Ranchi Road Ref. Plant	605	34	152
(including sillimanite Mines)			
3. Bhilai Ref. Plant	772	89	115
4. Registered Office	61	—	6
5. IFICO	1016	56	152
	3203	282	486

Bhandaridah Refractories Plant

3.4.11 This plant has a licensed capacity of 24,000 tonnes of fireclay bricks per year; the installed capacity of the plant, however, is 15,000 tonnes per year. The expansion of this plant from its existing capacity of 15,000 tonnes to 26,000 tonnes per annum costing Rs. 3.20 crores is under way.

Bhilai Refractories Plant

3.4.12 The construction of Bhilai Refractories Plant to produce 30,000 tonnes of Basic Bricks, 20,000 tonnes of silica bricks and 60,000 tonnes of Fireclay refractories at an estimated cost of Rs. 37.42 crores is in an advanced stage. All major technological equipment of the basic refractories shop and the tunnel kiln have been commissioned. Despatch of basic bricks to Bhilai Steel Plant will be commenced shortly.

3.4.13 In the silica shop, the technological equipment are under trial run. The Chamber kiln and producer gas plant are expected to be ready for lighting by the end of the current financial year.

3.4.14 The Fireclay Shop will be ready for commissioning by May, 1981.

India Firebricks & Insulation Company Limited

3.4.15 The paid up capital of the subsidiary company amount to Rs. 149.67 lakhs against the authorised capital of Rs. 200 lakhs. The sale turn over amounted to Rs. 342.02 lakhs in 1979-80 as compared with Rs. 291.75 lakhs in 1978-79. The rehabilitation scheme costing Rs. 277.03 lakhs undertaken by the company with a view to removing the bottlenecks and making the plant an economically viable unit has almost been completed. With the completion of this scheme, the Plant's capacity has gone up from 36,000 tonnes to 42,000 tonnes per annum and production has already picked up.

3.5 NEW STEEL PLANTS

3.5.1 As a part of the overall development programme for the augmentation of steel making capacity in the country, Government has taken a decision, in principle, to set up a shore based steel plant at Paradeep with a first stage capacity of 1.5 million tonnes of crude steel per annum to be subsequently increase to around 3 million tonnes and to the financing of the first stage of

the plant mainly through an external financing package assistance. Offers have been received from a number of foreign parties from West Germany, U.K. etc. A high level committee with Steel Secretary as Chairman and including, among others, the representatives of Planning Commission and Ministry of Finance has been constituted for conducting further negotiations with the foreign parties so as to firm up the prices as well as other terms and conditions.

3.6 KUDREMUKH IRON ORE PROJECT

Background

3.6.1 The Kudremukh Iron Ore Project, situated in the Chikmagalur district of Karnataka State was taken up by the Government of India on the basis of a long term contract signed in November, 1975 for supply of high grade iron ore concentrate for the pelletisation plants to be established in Iran. Under a Financial Agreement signed simultaneously, the then Government of Iran had agreed to provide credit not exceeding US \$ 630 million to finance the cost of construction of the Kudremukh project proper and the infrastructure consisting of development of the New Mangalore Port, construction of power facilities and building of a road from the project site in the Western Ghats to the port. The supply contract envisaged delivery of a total quantity of 150 million tonnes of concentrates over a period of 21 years starting from end of August, 1980 at the rate of 3 million tonnes in the first year, 5 million tonnes in the second year and 7.5 million tonnes annually from the third year onward.

3.6.2 Preliminary preparatory work on the project was started in early 1975 itself. The project was expected to beneficiate and upgrade low-grade magnetite-hematite ore (average 39% Fe) to high grade concentrate (average 66.50% Fe) and to transport the concentrate to the port through a 67 km. long pipeline in the form of slurry. As the technologies involved were not available in India, on the basis of competitive tenders, Canadian Met-Chem (Consultants) Ltd., a Canadian subsidiary of US Steel Corporation were appointed in August, 1976 as the Mining Associate-cum-Engineer Constructor for the project.

Scope of the Project

3.6.3 The project proper consists of the mine, the ore processing and concentrating facilities, the tailings dam in which the detritus after extraction will be dumped, the slurry pipeline to the

port and the port facilities for filtration, storage and ship-loadings. The development of the New Mangalore Port to receive ship of up to 60,000 DWT has been undertaken by the Ministry of Shipping and Transport. In order to meet the electric power requirements of the project, the Government of Karnataka are building dams and water conductor systems to divert the water of the Chakra and Saychaklu rivers to the Sharavati basin.

Progress of the Work

3.6.4 According to the contract with Iran, delivery of iron ore concentrate was to commence from 24 August, 1980. The first production line of the Kudremukh project together with all necessary ancillary facilities was commissioned on 22/23 August, '80, ahead of schedule and concentrate slurry was pumped to Mangalore. The remaining three lines will be commissioned (between December 1980 and March 1981) by 31st March, 1981.

Project Estimate and Expenditure

3.6.5 The sanctioned capital cost of the total project is Rs. 647.33 crores including Rs. 545.30 crores for the project proper. It is anticipated that the completion cost of the project will be about Rs. 472.50 crores, representing a saving of about Rs. 75 crores.

3.6.6 The authorised capital of the Company is Rs. 200 crores. This has been fully paid up. The remaining requirement of funds is being provided to the company in the shape of loans. The Government loans on capital account stood at Rs. 246.61 crores as on 31-12-1980. The total expenditure incurred on the project proper as on 31-12-1980 was Rs. 441.44 crores. The expenditure on the infrastructure facilities such as road, power and port was Rs. 92.95 crores upto September/October 1980. The budgetary estimates of expenditure during 80-81 and 1981-82 of the project proper are Rs. 70 crores and Rs. 14.60 crores, respectively.

3.6.7 The total number of employees as on 31st December, 1980 and the number belonging to the Scheduled castes, scheduled

tribes and women among them are shown in the table below:

	Total number of Employees	Number of Scheduled Castes	Number of Scheduled Tribes	Number of Women
Group 'A'	305	11	3	6
Group 'B'	96	6	1	2
Group 'C'	1176	108	12	68
Group 'D'	193	27	27	11
(excluding sweepers)				
Group 'D'	18	18	—	5
(Sweepers)				

Pelletisation Plant

3.6.8 During the visit of a KIOCL delegation to Iran in Feb. '80, it was indicated by the Iranian side that their maximum off-take concentrate was not likely to exceed 4.5 or 5 million tonnes annually and that there would be a delay of about 1½ years in the commencement of off-take. (Under the prevailing circumstances, now, even this may not materialise, both in terms of quantity and in terms of time-lag.) The capacity of the Kudremukh project being 7.5 million tonnes per year, a quantity of approximately 3 million tonnes would thus have been rendered surplus. Iron Ore concentrate of this type is not a readily marketable commodity and is not generally quoted in the international markets. Nevertheless, Kudremukh Iron Ore Company have been making vigorous efforts to find alternative buyers for the surplus concentrate. At the same time, it has been decided, in principle, to establish a pellet plant at Mangalore, which has the advantage of an already developed infrastructure, to convert the surplus concentrate into iron ore pellets which have a better market. An investment decision on this proposal is expected to be taken shortly.

3.7 NATIONAL MINERAL DEVELOPMENT CORPORATION

3.7.1 National Mineral Development Corporation Limited (NMDC) was incorporated on November 15, 1958 with the main objective of developing and exploiting the mineral resources in the country (other than coal, oil, natural gas and atomic minerals). Presently, on the production side, the activities of NMDC are confined to iron ore and diamond. On the exploration, planning and development side, its investigation and consultancy wings are dealing with various minerals-iron ore, diamond, limestone and dolomite, rock phosphate and apatite, gypsum and selenite, bentonite, bauxite, beach sands etc.

3.7.2 The following units are now under the control of NMDC:

A. PRODUCTION PROJECTS

Iron Ore

Bailadila-14	}	Madhya Pradesh
Bailadila-5		
Donimalai		
		Karnataka

Diamond

Panna Diamond Mining Project (Majhgawan Mine)	Madhya Pradesh
---	----------------

B. INVESTIGATION AND PLANNING

Iron Ore

Bailadila Deposits Nos. 4, 10, 11B, 11C, 13 and Blue Dust, Bailadila-14	Madhya Pradesh
---	----------------

Kumaraswamy, Bababudan West Coast Deposits (in collaboration with NML)	}	Karnataka
Malangtoli		
Ongole		
		Orissa

Diamond

Hinota Exploration of diamondiferous deposits of Andhra and Madhya Pradesh (in collaboration with GSI & MEC)	Madhya Pradesh
--	----------------

Dolomite Jagadai	Andhra & Madhya Pradesh
	Madhya Pradesh

3.7.3 The Corporation has also set up out of its Planning & Engineering division a Consultancy wing and Research and Development Laboratories at Hyderabad. NMDC as a Canalising Agent is also assigned the work of import and distribution of sponge iron which will be consumed by mini steel plants in the country.

Finance

3.7.4 The authorised capital of the Corporation is Rs. 150 crores. The equity capital as on 31-12-1980 was Rs. 76.27 crores. The Govt. loans outstanding as on 31-12-1980 amounted to Rs. 62.95 crores.

3.7.5 During 1979-80, the Corporation suffered a loss of Rs. 6.89 crores after accounting for interest subsidy of Rs. 6.55

crores. During 1978-79, the Corporation had made a profit of Rs. 1.89 crores after adjustments pertaining to earlier years. The main reason for the losses during 1979-80, is that the iron ore is being exported at international prices. In India the supplying mines are located inland and export of iron ore from these interior mines requires a long haulage involving high railway freight. These losses are being incurred by NMDC notwithstanding its satisfactory performance in regard to production, because of the poor residual value it is receiving for its iron ore after recovery of the costs by the port, Railway and MMTC.

Production

3.7.6 The production in the units of NMDC during 1979-80 and 1980-81 is tabulated below:—

Name of the Project	1979-80 Actuals		1980-81		(in lakhs tonnes)	
	Lumps	Fines	Target	Apl.—Dec. '80†	Jan.—March '81†	
					Lumps	Fines
Bailadila-14	24.66*	—	24.00	17.61	6.60	2.72
Bailadila-5	22.53	—	30.50	20.96	8.50	—
Donimalai	5.70	4.15	5.84	4.28	1.62	1.84
Panna Diamond Mining Project (Carats)		13432	13500		10156	3690
			†Actuals			†Anticipated

*Including 2.83 lakhs tonnes of float ore.

3.7.7 During 1979-80, the Corporation earned foreign exchange to the tune of Rs. 81.89 crores from the export of iron ore, the estimated cumulative foreign exchange earnings upto 31-3-1980 on this account is being Rs. 550.82 crores. During 1980-81 upto December, 1980 the estimated foreign exchange earnings by NMDC from export of iron ore amounted to Rs. 76.04 crores.

Bailadila-11C

3.7.8 It has been decided to develop this as a supplementary mine for Bailadila-14 for meeting the anticipated domestic and export demands.

Bailadila-14 and Bailadila-5

3.7.9 During 1979-80, the Japanese Steel Mills agreed to take only 60 lakh dry long tons (or 63 lakh wet metric tons) of lump ore against the contracted quantity of 81.60 lakh WMT from Bailadila complex because of the continued recession in the steel industry. Keeping in view the low off-take of the Japanese Steel Mills and the stocks at the mines and the port, the manual mining/semi-mechanised mining were not continued after the expiry of the various contract periods. Production and despatches from these mines during the year were also affected due to workmen's strike from 8-11-79 to 23-11-79 and frequent failures of indigenous equipment in the plant at Bailadila-5.

3.7.10 During 1980-81, the Japanese Steel Mills had agreed to purchase 59.6 lakh WMT of lump ore and 8.3 lakh WMT of fines from Bailadila sector.

Donimalai

3.7.11 During 1979-80, despatches from Donimalai were only 7.5 Lakh tonnes against the designed capacity of 36 lakh tonnes per year. This was because the additional rail transport capacity towards Madras Port planned for this project did not materialise and also because of severe power cut in Karnataka which affected production. During 1980-81, a contract was secured on a trial basis for supply of 2.50 lakh Dry Long Tonnes (2.64 lakh WMT) of lump and 2.50 Dry long Tonnes (2.75 lakh WMT) of fines through Madras Outer Harbour to Japan. In 1980-81, the production was also affected due to restrictions in power supply by Karnataka Electricity Board and inadequate availability of railway rakes resulting in choking of mines stock-

yard and consequent stoppage of plant operation. Against the contracted trial shipment of 5 lakh tonnes of lump and fines to be supplied to Japanese Steel Mills during April-December, 1980, 5.79 lakhs of lump and fines were produced and 5.35 lakh tonnes of lump and fines were despatched to Madras Port during this period.

Panna Diamond Mines

3.7.12 Production of diamonds during 1979-80 from Majhgawan was 12721 carats and was higher than the designed capacity of 12000 carats per annum. As operations at Ramkheria Mines were proving uneconomical and the mines were incurring losses, a voluntary retirement scheme for daily rated workers was introduced w.e.f. 15-5-1979 to facilitate gradual and peaceful reduction in the labour strength. Under the scheme, 327 workers retired. The mining operations at Ramkheria were closed w.e.f. 1-7-79. The treatment of gravel lying in the stockpile and from spillages around the plant was however continued upto July, 1980.

3.7.13 Diamonds sales during the year 1979-80 were 12979 carats for Rs. 206.93 lakhs.

3.7.14 During 1980-81, unprecedented heavy rains affected operation at the mine from June 1981-September, 1980. Still production up to December, 1980 exceeded the target by 3.1%. One good gem diamond weighing 20.97 carats was recovered from Majhgawan mine on 13-4-80. Another high quality gem diamond, the biggest so far recovered by the project, weighing 29.25 carats was recovered from the same mine on 27-10-1980. Diamond sales up to December, 1980 were 9730 carats for Rs. 150.90 lakhs.

Bailadila Pellet Plant

3.7.15 A proposal to establish an iron ore pelletisation plant of 2 million tonnes per year capacities was submitted to PIB for an investment decision on 31st July, 1980. This was considered by the PIB in its meeting on 5th February, 1981 along with a proposal to set up such a plant at Mangalore based on Kudremukh Concentrates. PIB has cleared the proposal for the Mangalore plant in preference to Bailadila. The tenders received from the foreign collaborators are in advanced stage of finalisation. M/s. PTKS, a Government of Indonesia Company, has shown keen interest in purchasing Bailadila pellets.

3.7.16. Consequent to the agreement with PTKS of Indonesia to import 30,000 tonnes of sponge iron on trial basis, NMDC imported the first consignment of 5,000 tonnes through Vizag Port in September, 1980. The second consignment of 13375 tonnes was received at Bombay Port in the last week of December, 1980.

Investigations

3.7.17 The position of the more important feasibility studies/ investigations taken up by NMDC is indicated below:—

A. Bababudan Magnetite Deposits

All programmed field investigations were completed by March, 1980 as scheduled. The Pilot Plant tests are nearing completion. The Second Phase Techno-Economic Feasibility Report is under preparation and is expected to be ready by March, 1981.

B. Ongole Magnetite Deposits

The investigation works under the First phase have been completed and the detailed investigation report based on the first phase is completed. The Corporation is awaiting sanction from Mineral Development Board for taking up further investigation for preparation of Techno-economic Feasibility Report.

C. West Coast Iron Ore Deposits

A few selected iron ore deposits along with the West Coast are to be investigated jointly with Mysore Minerals Limited. The field work on the selected deposits is being started from January, 1981.

D. Bailadila-11B Iron Ore Deposit

Detailed exploration is in progress and will be completed by March, 1981. The project report is expected to be ready by October, 1981.

E. Kumaraswamy Iron Ore Investigation

Investigations have been completed and the report is under preparation and will be ready by March, 1981.

F. Jagdalpur Dolomite Investigation

One drilling rig has been commissioned and drilling geological mapping and survey works are in progress.

G. Malangtoli Iron Ore Investigation

The investigation has been completed. Further action in the matter would depend upon the investment decision for a steel plant at Paradeep.

H. Diamond Exploration

Under the GSI scheme for detailed exploration of diamonds, NMDC is to carry out the treatment of samples of Pipe Rocks, Conglomerates and Gravels of Andhra Pradesh and Madhya Pradesh.

R & D Laboratories

3.7.18 The NMDC Board had approved the augmentation of R&D facilities at Hyderabad at an estimated cost of Rs. 150.28 lakhs. The total expenditure incurred upto 31-12-1980 is Rs. 143.66 lakhs. The proposal is to undertake study of steel making raw materials like limestone, dolomite, refractory and alloy materials, etc., in addition to the studies of iron ore now being undertaken.

Personnel

3.7.19 The total number of Personnel of NMDC as on 31-12-1980 is given below:—

Group	Total No. of Regular Employees as on 31-12-80.	No. of Scheduled Caste employees (Out of Col. 2).	No. of Scheduled Tribes employees (Out of Col. 2).	No. of Women employees (Out of Col. 2).
A	479	15	3	13
B	563	27	4	14
C	3212	365	293	119
D	1619	260	531	83
(Excluding Sweepers)				
D	116	77	3	25
(Sweepers)				
TOTAL	5989	744	834	254

3.7.20 The industrial relations situation in the Corporation was generally peaceful except for the strike by the workers of the Bailadila Complex during November-December, 1979. A

Memorandum of Understanding has been arrived at between the NMDC and the workers regarding the revised wage structure.

3.8 MANGANESE ORE INDIA LIMITED

3.8.1 Manganese Ore India Limited (MOIL) was formed in 1962 with the Government of India and the two State Governments of Madhya Pradesh and Maharashtra holding 51% shares and the Central Province Manganese Ore Company Limited (CPMO), a U.K. based company holding the balance 49% shares. The shares held by CPMO were acquired by Government and MOIL became a wholly owned Government Company. MOIL was granted permission to enter the area of Dongri Buzurg Mine in Maharashtra which was previously being worked by CPMO.

FINANCE

3.8.2 The authorised capital of the company is Rs. 6 crores consisting of 4,00,000 Equity shares and 2,00,000, -7½% Preference Shares of value of Rs. 100/-. The paid-up capital of the company is Rs. 2,15,45,100. The main activity of the company is mining of manganese ore. The bulk of its production is of high grade ore. Until 1978-79 its activities were confined only to the States of Maharashtra and Madhya Pradesh. MOIL has, however, extended its operations subsequently to the State of Orissa and Andhra Pradesh.

Performance

3.8.3 The performance of the company as regards output compares favourably with that of the previous year and the achievement is of the order of 102% of the target fixed for the period ending December, 1980. The production of manganese ore from the mines of the Company in 1979-80 was 4,43,829 tonnes. During the period April-December, 1980, the production was 3,44,347 tonnes as against the target of 3,39,221 tonnes. The company earned a profit of Rs. 107.98 crores during 1979-80 (before taxes) as against a profit of Rs. 2.30 crores in 1978-79. For the period from April-December, 1980 the company made a profit of Rs. 20.22 lakhs. The decline in the profit for the year 1980-81 is mainly because of increase in the cost of materials and normal increases in wages. The company has declared dividend on the Equity shares and

on the Cumulative preference shares for all the year since 1974-75. For the year 1979-80 MOIL has paid dividend at the rate of 10% on equity shares and 7½% on preference shares. The company also disbursed profit sharing bonus for the year 1979-80 at the rate of 11.89%.

Personnel

3.8.4 The details of employment of SC/ST candidates in MOIL as on 31-12-80 are furnished below :—

Group	SC	ST	Others	Total
A	2	3	137	142
B	1	2	59	62
C	209	239	1031	1479
D	1934	4245	5010	11189
Sweeper	136	—	—	136
TOTAL	2282	4489	6237	13008

3.9 METALLURGICAL & ENGINEERING CONSULTANTS (INDIA) LIMITED

General

3.9.1 Metallurgical & Engineering Consultants (India) Limited (MECON), is a Public Sector Undertaking, under the direct administrative control of the Government of India, Ministry of Steel and Mines. It is engaged in technical consultancy, design and engineering of metallurgical—both ferrous and non-ferrous industries and certain chemical industries, and design, engineering supply and installation of rolling mills & auxiliary equipments, processing line equipments coke even batteries.

Share Capital and Turnover

3.9.2 The Authorised Capital of the Company is Rs. 4 crores and the Issued, Subscribed and fully Paid-up Equity Share Capital as on 31-3-80 is Rs. 201.53 lakhs.

3.9.3 The turnover of the Company in 1979-80 was Rs. 19.23 crores compared to the turnover of Rs. 12.21 crores in 1978-79. In 1979-80 the Company made a net profit of Rs. 3.80 crores as against a net profit of Rs. 2.43 crores in the year 1978-79. During the 1980-81 turnover is likely to be Rs. 38.24 crores and profitability is also expected to go up.

Activities

3.9.4 The important activities of the Company during the year 1979-80 were as follows:—

FERROUS PROJECTS

Bokaro Steel Plant

3.9.5 MECON continued to provide technical consultancy and engineering services to Bokaro Steel plant, as their Principal Consultants, for their expansion to 4.0 Mt. stage. The company made satisfactory progress in preparation of technological, civil, structural, electrical and services working drawings for the expansion scheme. Detailed engineering work for 4.0 Mt stage was nearing completion at the close of the year, except for the cold rolling mill complex. The Slag Granulation Plant was commissioned in July, 1979, and the Naphthalene Rich Solar Oil Regeneration Plant was commissioned in November, 1979. The integrated run of Bhavanathpur Limestone Project (Stage-I) was carried out in December, 1979, and MECON provided detailed engineering and consultancy services for the Stage-II expansion of the Project. The design, engineering and supply work for cold rolling mill complex under 4.0 Mt. expansion scheme also continued. Procurement action for the mills and auxiliary equipments was nearing completion at the close of the year. MECON is also providing process know-how, detailed design, detailed engineering, inspection, assistance and commissioning for Benzol Plant and also detailed engineering and consultancy services for the Captive Power Plants.

Bhilai Steel Plant

3.9.6 Detailed engineering work for Second Sintering Plant was completed and the first Sintering Machine was commissioned in June, 1979. Erection work for the second Sintering Machine was in progress. Detailed engineering work for the mechanisation of Dalli Iron Ore Mines was completed. Substantial portion of detailed engineering work relating to Plate Mill, Converter Shop, Continuous Casting, Power Plant No. 2, Oxygen Plant No. 2 Refractory Materials Plant No. 2 along with auxiliary units of 4.0 Mt. expansion were completed. Detailed engineering work for Blast Furnace No. 7 Complex with Cast House, Slag Granulation Plant and Coke Oven & By-Products Units was in hand. Detailed engineering work for Bhilai Refractories Plant was completed. Trial runs in the Basic

Shop had been started. Finishing jobs for Silica and Fire Clay Shops were being done. MECON also prepared an investment proposal from modernisation of 2.5 Mt. stream based on revised BETC Report for Bhilai Steel Plant. MECON has also undertaken turn-key responsibility for the design, supply, installation and commissioning of lubrication and the hydraulic systems for the Plate Mill.

Rourkela Steel Plant

3.9.7 Major assignments in hand at the close of the year included revamping and modernisation of the Hot Strip Mill. MECON also rendered, from time to time, technical consultancy and engineering services in various fields, MECON was responsible for complete revamping and modernisation of the HOT Strip Mill on turn-key basis and the work has been completed. This is a major and very complex job of a type which has been done successfully for the first time in the country. Coke Oven, Battery No. 1A was also commissioned during the year.

Durgapur Steel Plant

3.9.8 Pre-Investment Feasibility Reports on measures to achieve the rated capacity in SMS and modernisation of Blooming and Billet Mills were submitted during the year.

Kudremukh Iron Ore Company Limited

3.9.9 MECON continued to render consultancy and detailed engineering services for Kudremukh Iron Ore Project of KIOCL and all major assignments were completed during the year.

Visvesvaraya Iron & Steel Limited

3.9.10 A Detailed Project Report on the facilities for optimisation under the Sixth Five Year Plan, Feasibility Report for a 60 MW capacity Power Plant and a Viability Study on the installation of Continuous Casting Machine were submitted to VISL. MECON continued to render detailed engineering services for the Ferro Vanadium Plant.

Non-Ferrous Project : Bharat Aluminium Co. Limited.

3.9.11 MECON continued to render technical consultancy and detailed engineering services to Bharat Aluminium Company Limited (BALCO), as their Prime Indian Consultants for their Korba Smelter and Fabrication Complex. The work for

preparation of Composite Electrical Diagrams and Thyristor Control Diagrams for various units of Sheet Rolling Shops was completed. MECON also undertook detailed engineering for setting up Automatic Voltage Control System for the Aluminium Smelter at Korba. MECON was assigned the work for revamping of the 200,000 t/yr capacity Alumina Plant at Korba. MECON also provided assistance to BALCO for the preparation of a Feasibility Report for setting up an export-oriented 600,000/800,000 t/yr capacity Alumina Plant in Andhra Pradesh. The work of preparation of a Feasibility Report for development of Gandhamardan Bauxite Deposit for supply of Bauxite to Korba Aluminium Plant was also taken up.

Consultancy, Engineering, Design and Supply of Rolling Mills and Auxiliary Equipments

3.9.12 MECON continued the work of detailed engineering and consultancy for the major rolling mills for Bhilai 4.0 Mt. and Bokaro 4.0 Mt. expansion schemes. Detailed engineering and consultancy work for installation of Seamless Tube Plant for Bharat Heavy Electricals Limited at Tiruchi was completed. The Hot Mill was commissioned in November, 1979, the cold Drawing and Finishing Sections were completed earlier. The Cold Rolling Mill for Steel Strips Limited, Chandigarh, was commissioned in February, 1980. Work relating to Cold Rolling Mills and processing and Finishing Lines for 4.0 Mt. stage Cold Rolling Mill Complex of Bokaro Steel Plant, Silicon Steel Project of Rourkela Steel Plant and Skin Pass Mill of Salem Steel Plant continued during the year. Major contracts completion of erection and commissioning included Blooming Mill for design and supply included one 1420 mm 5-stand Tandem Cold Rolling Mill, one 1420 mm Single stand Skin Pass Mill, one 1420 mm Twin Stand DCR/Temper Mill and one 1420 mm Single Stand Temper Pass Mill for Pickling Line - all for Bokaro Steel Plant—were in hand. Auxiliary systems for 3600 mm Plate Mill for Bhilai Steel Plant, complete supply, including Hot Strip Mill of Rourkela Steel Plant One-7 Stand Wire Rod Mill and One-3 Stand Bar Rolling Mill for Super Alloys Project of Mishra Dhatu Nigam, Hyderabad; One 2-High Reversing Blooming Mill with ancillary Equipment for GKW, Calcutta; one

800 mm × 1500 mm 2-High Reversing Skin Pass Mill for Salem Steel Project and one 305 mm and 1220 mm × 1270 mm 4-High Reversing Cold Rolling Mill for Silicon Steel Project of Rourkela Steel Plant were also in hand.

Design, Engineering of Coke Oven and other Chemical Projects

3.9.13 MECON has developed its own design for coke oven battery and has set up and is setting up coke oven batteries of its own design and engineering in various Public Sector Steel Plants. It has also undertaken other chemical projects, such as, Titanium Dioxide Project and Carbon Black Project in Kerala, Calcium Carbide Project in Andhra Pradesh, Naphthalene Rich Solar Oil Regeneration Project and Benzol Rectification Plant for Bokaro Steel Plant.

Foreign Assignments

3.9.14 MECON continued to render technical consultancy and project monitoring services to the Federal Government of Nigeria for their 1.0 Mt. Delta Steel Plant. MECON also continued to render technical consultancy assistance to the Federal Government of Nigeria in their Township Project for the aforesaid Plant. A Feasibility Report for expansion of the aforesaid plant from 1.0 Mt. to 2.5 Mt stages was submitted to the Federal Government of Nigeria. A contract has also been negotiated under which MECON will render technical consultancy and project monitoring services to the Federal Government of Nigeria for the aforesaid Township Project and the Draft of the Contract is under consideration of the Federal Government of Nigeria.

3.9.15 Work relating to preparation of Feasibility Report for a 1.0 Mt. Iron and Steel Project in Syria also continued.

3.9.16 MECON received an assignment from Bank Negara Indonesia 1946 for preparation of techno economic study of the existing steel plant, P. T. Baja, and the report was submitted in December 1979. An assignment from P.T. KRAKATAU Steel Plant in Indonesia for preparation of a Pre-Feasibility Study for setting up 4 Cold Rolling Mill Complexes to be located at various places in Indonesia was also received and the reports were submitted in March and May, 1980.

3.9.17 M/s Birla Brothers Private Limited, Calcutta, gave an assignment to MECON for preparation of a Feasibility Report for setting up an Alloy and Special Steels Plant in Nigeria. The Report was submitted in April, 1980.

3.9.18 In implementation of the Technical Collaboration Agreement between MECON and ALUSUISSE of Switzerland for undertaking work relating to setting up of Alumina, Aluminium and Bauxite Projects in third countries, an Indo Swiss Engineering Company Limited, with 50 : 50 Equity participation, was incorporated in New Delhi in December, 1979.

Miscellaneous Assignments

3.9.19 MECON continued to provide detailed engineering and technical consultancy services to Bharat Refractories Limited for their expansion scheme. Assignments completed during the year included Feasibility Reports for Charge Chrome/Ferro Chrome Plant in Orissa, Gandhamardan Iron Ore Complex for Orissa Mining Corporation and an Action Plan for mineral deposits in Bihar State Mineral Development Corporation. MECON received an assignment from Orissa Mining Corporation for detailed engineering for Charge Chrome Plant. A Feasibility Report for setting up a 1500/2400 t/yr. capacity Aluminium Foil Plant in Andhra Pradesh was submitted to Andhra Pradesh Industrial Development Corpn. In addition, a Feasibility Report for setting up a 1500/3000 t/yr capacity Aluminium Foil Plant in Gujarat for industrial Extension Bureau, Government of Gujarat, was nearing completion. Work on Titanium Dioxide Pigment Plant of Kerala Minerals and Metals Limited and Carboron Black Plant at Cochin also continued to be in progress. A Feasibility Report on modernisation and expansion of Refractories Plant and Magnesite Mines at Salem was also completed for Burn Standard Company Limited. The assignments in hand also included detailed engineering of Meghahatuburu Iron Ore Project and Project Report on development of Stockyards for Central Sales Organisation of Steel Authority of India Limited.

Personnel

3.9.20 The total number of employees of the Company as on 31-12-1980, indicating separately the number of employees

belonging to Scheduled Castes and Scheduled Tribes and the number of women employees is given below :—

Group of Posts	Total Number of Employees	No. of S.C. Employees	No. of S.T. Employees	No. of Women Employees
'A'	1678	35	15	15
'B'	319	3	15	81
'C'	912	90	135	16
'D'	473	64	221	
(Excluding Sweepers)				
'D' (Sweepers)	82	56	24	11
TOTAL	3464	248	410	138

3.9.21 Industrial relations situation during the period was normal.

3.10 HINDUSTAN STEELWORKS CONSTRUCTION LIMITED

3.10.1 Hindustan Steelworks Construction Limited (HSCL) was incorporated in June, 1964 with the principal object of undertaking all major construction works relating to setting up of steel plants. Subsequently, the Company has diversified its activities and has been constructing industrial complexes, townships, dams, bridges, silos, power plants, mining complexes etc. HSCL has developed expertise in the various branches of constructional activities like civil engineering, structural fabrication and erection, mechanical, technological and electrical equipment erection and other allied activities including design and architectural requirements, and has thus emerged as the largest construction organisation in the public sector.

3.10.2 The authorised capital of the Company is Rs. 20 crores. The paid up capital as on 31-3-1980 was Rs. 12 crores and has subsequently been raised to Rs. 13.50 crores.

3.10.3 The turnover of the Company for the year 1979-80 was Rs. 126.09 crores as compared to Rs. 117.34 crores during the year 1978-79, thus maintaining its increasing trend. Budgeted turn-over for the year 1980-81 as per revised estimate is estimated to be Rs. 165.79 crores. The Company has also secured foreign contracts from Libya and Iraq.

3.10.4 The Company incurred a loss of Rs. 704 lakhs in 1979-80. This was mainly due to the impact of surplus labour force with the Company following the completion of a substantial portion of work at Bokaro Steel Plant. The estimated loss for the year would amount to Rs. 14.34 crores.

3.10.5 The value of works on hand is Rs. 487.79 crores as on 30-11-1980.

3.10.6 Some of the important construction projects that the Company is executing are listed below :—

A. INDIA

Steel Sector

Bokaro Steel Plant Expansion to 4.0 MT stage. Ore processing plant and ore Handling Plant, Meghahatuburu Iron Ore Project.

Bhilai Steel Plant Expansion to 4.0 MT Stage.

Durgapur Steel Plant Rebuilding of Coke Oven Battery No. 2 ; Captive Power Plant ; Capital Repair of Coke Oven Battery.

Rourkela Steel Plant Capital/Running repairs to Coke Oven Battery, Civil & Structural Works of M.S.D.S. II, 4th Rising Main, Ferro Alloy Stores M.N.D. Shed, Additional Naphtha Plant, Revamping of Nitrolime Stone Plant, Silicon Steel Project etc.,

Salem Steel Plant Cold Rolling Mill Complex, Township etc.

Visakhapatnam Steel Plant Site levelling work.

Works Outside Steel Sector :
Mysore power Corporation, Karnataka, Concrete Dam Construction at Supa.

National Thermal Power Corporation Ltd., Singrauli, Super Thermal Power Plant site levelling and civil engineering works of water circulation system, Pump House and Intake structures.

National Thermal Power Corporation Ltd., Korba, Korba Super Thermal Power Plant-piling, pile cap, civil & structural works of Coal Handling Plant, 220 M. high RCC multiflue chimney.

Bharat Coking Coal Ltd. Coal preparation plant at Moonidih, Dhanbad.

Hindustan Copper Ltd. Civil and structural works for crushing and Screening Plant at Malankhand.

Fertilizer Corporation of India, Durgapur, Captive power Plant—Structural works.

Metro Railway, Calcutta Sub-way structures excluding diaphragm walls and stations for 4 Sections.

Gujarat State Electricity, Board Design & construction of RCC Chimney for Wanakbori Thermal Power Station Units 1, 2, & 3.

B. OVERSEAS

- (a) Libya (i) Construction of 28 School Building.
(ii) Construction of 25 School Building.
(iii) Construction of Quoranic School.
(iv) Construction of Main Training Centre at Tripoli.
(v) Construction of 8 nos. School Building, 5 Storey Block Flats at Beida.
(vi) Construction of 2 nos. School at Nalut.
- (b) Iraq (i) Water research Centre Complex at Baghdad.
(ii) Construction of 2269 houses and other associated works at Basrah.

Personnel

3.10.7 The total number of employees in Hindustan Steel-Works Construction Limited as on 31-12-1980 is given below :—

Group of Posts.	Total Strength	of which		No. of Women
		Scheduled Castes	Scheduled Tribes	
A	2001	28	11	5
B	628	35	1	6
C	17643	1908	1357	1404
D	5493	1353	1934	40
TOTAL :	25765	3324	3303	1455

3.10.4 The Company incurred a loss of Rs. 704 lakhs in 1979-80. This was mainly due to the impact of surplus labour force with the Company following the completion of a substantial portion of work at Bokaro Steel Plant. The estimated loss for the year would amount to Rs. 14.34 crores.

3.10.5 The value of works on hand is Rs. 487.79 crores as on 30-11-1980.

3.10.6 Some of the important construction projects that the Company is executing are listed below :—

A. INDIA

Steel Sector

Bokaro Steel Plant

Expansion to 4.0 MT stage.
Ore processing plant and ore Handling Plant, Meghahatuburu Iron Ore Project.

Bhilai Steel Plant Durgapur Steel Plant

Expansion to 4.0 MT Stage.
Rebuilding of Coke Oven Battery No. 2 ; Captive Power Plant ; Capital Repair of Coke Oven Battery.

Rourkela Steel Plant

Capital/Running repairs to Coke Oven Battery, Civil & Structural Works of M.S.D.S. II, 4th Rising Main, Ferro Alloy Stores M.N.D. Shed, Additional Naphtha Plant, Revamping of Nitrolime Stone Plant, Silicon Steel Project etc.,

Salem Steel Plant

Cold Rolling Mill Complex, Township etc.
Site levelling work.

Visakhapatnam Steel Plant

Concrete Dam Construction at Supa.

Works Outside Steel Sector :

Mysore power Corporation, Karnataka.

National Thermal Power Corporation Ltd., Singrauli.

Super Thermal Power Plant site levelling and civil engineering works of water circulation system, Pump House and Intake structures.

National Thermal Power Corporation Ltd., Korba

Korba Super Thermal Power Plant-piling, pile cap, civil & structural works of Coal Handling Plant, 220 M. high RCC multifue chimney.

Bharat Coking Coal Ltd.

Coal preparation plant at Moonidih, Dhanbad.

Hindustan Copper Ltd.	Civil and structural works for crushing and Screening Plant at Malanj-khand.
Fertilizer Corporation of India, Durgapur	Captive power Plant—Structural works.
Metro Railway, Calcutta	Sub-way structures excluding diaphragm walls and stations for 4 Sections.
Gujarat State Electricity, Board	Design & construction of RCC Chimney for Wanakbori Thermal Power Station Units 1, 2, & 3.

B. OVERSEAS

(a) Libya	(i) Construction of 28 School Building. (ii) Construction of 25 School Building. (iii) Construction of Quoranic School. (iv) Construction of Main Training Centre at Tripoli. (v) Construction of 8 nos. School Building, 5 Storey Block Flats at Bejda. (vi) Construction of 2 nos. School at Nalut.
(b) Iraq	(i) Water research Centre Complex at Baghdad. (ii) Construction of 2269 houses and other associated works at Basrah.

Personnel

3.10.7 The total number of employees in Hindustan Steel-Works Construction Limited as on 31-12-1980 is given below :—

Group of Posts.	Total Strength	of which		No. of Women
		Scheduled Castes	Scheduled Tribes	
A	2001	28	11	5
B	628	35	1	6
C	17643	1908	1357	1404
D	5493	1353	1934	40
TOTAL :	25765	3324	3303	1455

CHAPTER IV

THE PRIVATE SECTOR

4.1 TATA IRON AND STEEL COMPANY LIMITED

4.1.1 The industrial complex of Tata Iron & Steel Company Limited, consists of the integrated steel plant at Jamshedpur, captive collieries at Sijua, Jamadoba and West Bokaro and iron ore mine at Noamundi. The steel plant at Jamshedpur is the oldest integrated steel plant in the country. It has an installed capacity of 2 million tonnes per annum of steel ingots equivalent to 1.5 million tonnes of saleable steel. The plant produces a variety of semi-finished and finished steel items like blooms, billets, tin bars, rail and heavy structurals, plates, sheets, etc.

4.1.2 Production

The Steel Plant has been operating at more than 90 per cent capacity for the past many years. The production during the past 3 years has been as under :—

	('000 tonnes)	
	Steel Ingots	Saleable Steel
Capacity		
1978-79	2,000	1,500
1979-80	1,866	1,516
1980-81	1,779	1,448
(April—Dec.' 80)	1,377	1,116

During the current year, operations have been seriously affected by acute shortage of coking coal, severe restrictions on power supply from D.V.C. and shortage of wagons for movement of coal and raw materials. Subject to availability of adequate coal, power and railway transport during the remaining months of the year, the production of saleable steel in the year 1980-81 is expected to be 1.5 million tonnes.

4.1.3 Exports

During the year 1979-80, the company's exports of steel were 7,300 tonnes. There have been no exports of steel materials during 1980-81 due to the ban imposed by the Government on the export of steel materials.

4.1.4 Important Capital Schemes

(a) Five Year Programme

In order to maintain operational efficiency, the company has to undertake a continuous programme of major replacements, repairs etc. The Board of Directors of the company have sanctioned, in principle, a 5 year capital expenditure programme for the period 1980-81 to 1984-85, for this purpose, amounting to Rs. 193 crores.

(b) Colliery Development Project (Phase-II)

At the West Bokaro Colliery, two quarries have been opened out and raising of coal has commenced; another underground mine is also being opened out. Structural work for the coal preparation plant is in hand. The company hopes to complete the West Bokaro Project in 1981.

(c) Modernisation Programme

The company has undertaken a modernisation programme at a total capital cost of Rs. 200 crores. Under the programme, half of the steelmaking capacity, which is over 50 years old, will be replaced by setting up a new steel melting shop using modern Oxygen process. The plant will be able to sustain a total liquid steel out-put of 2.16 million tonnes per annum against the present capacity of 2.00 million tonnes per annum. In terms of saleable steel, the capacity will be increased from 1.524 million tonnes to 1.740 million tonnes per annum.

4.2 ELECTRIC ARC FURNACE STEEL MAKING UNITS (MINI STEEL PLANTS)

4.2.1 Besides the integrated steel plants, the electric arc furnaces alongwith re-rolling mills, constitute an important segment of the steel industry in the country. While the integrated steel plants produce primarily mild steel on a mass scale through the blast furnace route, using coking coal, the electric arc furnaces have in-built flexibility to produce alloy and special steels, in small tonnages required, in addition to mild steel by using scrap/sponge iron. Use of melting scrap/sponge iron enables the country to conserve precious coking coal.

4.2.2 During the current financial year, the electric arc furnaces were handicapped by the poor availability of power. To help the industry surmount their problems, the Government continued most of the existing fiscal and other reliefs granted during

the previous year and in addition took the following new measures to supplement previous ones:—

- (a) The direct import of ferrous melting scrap by such actual users who had made full use of their import licences issued in previous years for direct imports, or made genuine attempts in that direction, was continued.
- (b) The National Mineral Development Corporation, a public sector undertaking, imported sponge iron for use in the electric arc furnaces on an experimental basis. About 30,000 tonnes of sponge iron have already been imported. The results are reported to be good. A further import of 50,000 tonnes has also been contracted for.
- (c) The sponge iron plant at Kothagudem in Andhra Pradesh started production and the reports from the furnaces which used the product were very satisfactory.
- (d) The excise duty relief on the products of electric arc furnaces through the use of indigenously produced sponge iron was also given the same parity as on the products of electric arc furnaces melting scrap/imported sponge iron.

4.2.3 Steps taken earlier to set up a Demonstration Sponge Iron Plant within the country culminated in the successful commissioning of the U.N.D.P./UNIDO sponsored plant at Kothagudem, Andhra Pradesh. This plant has a rated capacity of 30,000 tonnes per annum of sponge iron. Within a few days of starting the trial runs, the plant reached its rated capacity. The metallisation achieved was between 92 and 95%. The plant has been running on 100% non-coking coal without the use of any oil. The production of indigenous sponge iron while on one hand is expected to decrease our dependence on imports of melting scrap, on the other this will help electric arc furnaces to produce different grades of alloy and special steel because of the purity of the raw material, which is not always guaranteed in the case of melting scrap.

4.2.4 The facility of free diversification in the production of electric arc furnaces into all grades of alloy steel including stainless steel was continued. This has resulted in considerable increase in production of carbon constructional and alloy constructional steel in the current year over that in the previous year.

4.2.5 At present there are 147 electric arc furnaces in the country. The total annual licensed capacity of these units is 3.33 million tonnes for the production of steel ingots. Out of these, 140 units, corresponding to an annual capacity of 3.16 million tonnes, have been commissioned.

4.2.6 The capacity utilization of these units has improved since July, 1980 along with the improvement in power supply and was in the range of 71% to 75% during July—September, 1980 as against only 60% to 66% during the corresponding period last year. The comparative figures of production, up-dated and incorporating information received subsequently, in the last 3 years and in the first nine months of the current year is given below:—

	(in thousand tonnes)
1977-78	1187.2
1978-79	1767.5
1979-80	1663.2
1980-81 (Upto Dec., 1980)	1478.9
1980-81 (Estimated)	1729.4

4.2.7 Taking advantage of the Government's policy of encouraging installation of down stream facilities, as many as 39 electric arc furnace units applied for permission to install re-rolling mills. To protect the interests of the small scale industries located nearby, on the spot inspections were carried out to ensure that such a permission does not adversely affect the interest of the small scale re-rollers. So far, the Government have allowed permission to 13 existing electric arc furnace units to install matching re-rolling capacity.

4.2.8 For improving quality of the product-mix of these units, the Government encouraged installation of continuous casting machines. So far 29 electric arc furnace units have been given permission to install these machines.

4.3 Re-Rolling Industry

4.3.1 The re-rolling industry came into existence in the 30's. Today the steel re-rolling industry is recognised as an integral part of the total steel system of the country. It meets about 70% of the country's demand for bars and rods. Its growth has, however, been haphazard. The number of re-rolling units which were about 400 in 1966 has increased to over 1,000 in the course of the last 14 years.

4.3.2 A Technical Committee was constituted in September, 1978, to make an in-depth study of the industry. The Technical Committee has submitted its report to the Government and from the report, the following profile of the industry emerges :

- (i) There are about 1060 re-rolling units in the country out of which 1033 responded to the questionnaire prepared by the Committee before 31-12-1979.
- (ii) The re-rolling mills in the country can be classified into two broad groups viz., (a) Iron and Steel Control Units, and (b) Units in the small scale sector. The total assessed capacity of the 171 Iron and Steel Control Units has been shown as 6.0618 million tonnes and those of small scale units as 10.6546 million tonnes. The total capacity of 894 re-rolling mills has been assessed at 16.9164 million tonnes.
- (iii) Maximum concentration of the re-rolling mills is in six States, namely, Punjab, Uttar Pradesh, West Bengal, Maharashtra, Tamil Nadu and Gujarat.
- (iv) The original investment as reported by 860 re-rolling units, totals up to Rs. 77 crores and of this about Rs. 50 crores worth of investment is accounted by the mills in the organised sector and remaining Rs. 27 crores by the mills in the small scale sector.
- (v) A total number of 65,446 persons are reported to be employed by 900 re-rolling units, which furnished information regarding employment.
- (vi) Out of the total 1033 re-rolling units, only 165 units have ISI licences and roll materials to ISI standards.
- (vii) The major raw materials for the industry appear to be heavy blooms and slabs and other re-rollable scrap items like untested rails, defective billets/blooms, etc. Out of 1030 re-rolling units, 710 have reported a production of 2.9 million tonnes during 1977-78. Of this about 45% is accounted for by the medium sector units and balance 55% by the small scale sector units. The re-rollers virtually account for country's entire production of light sections of flats, angles, window section and other special sections required by Railways, Electricity Boards, Collieries, etc.

4.3.3 The Government have accepted the assessment made by the Technical Committee and processing of the report has been undertaken in two parts. As regards the re-rolling units in the organised sector Department of Steel has recommended endorsement of assessed capacity on 114 Registration Certificates/Licences. Endorsement of re-assessed capacities on remaining units in the organised sector is also being processed. In respect of re-rolling units in small scale sector, the Development Commissioner (Small Scale Industry) has been advised to take up similar action at the level of State Directorates of Industries. Action on other recommendations made by the Technical Committee is also being followed up.

4.3.4 The production of re-rolling mills during last 3 years, including the 66 units holding Iron and Steel Control Sanction, during last 3 years and in the first 9 months of the current year is as follows:

	(000 tonnes)
1977-78	982.3
1978-79	1051.4
1979-80	1225.0
1980-81 (upto Dec., 80)	1057.0
1980-81 (Estimated)	1343.4

4.4 STEEL WIRE DRAWING INDUSTRY

4.4.1 There are 71 units in the organised sector with an annual licensed capacity of 755.79 thousand tonnes. As against this, there are reported to be 600 wire drawing units in the small scale sector. Supply of raw materials to this industry without any increase in the indigenous availability of raw material viz. wire rods, has adversely affected the industry in the organised sector.

4.4.2 To protect the interest of the small scale wire-drawers, the Department had so far followed a policy of not allowing diversification to the existing wire drawers in the organised sector to mild steel wires in gauges thicker than 18 SWG, although mild steel wire drawing is not an item reserved for the small scale sector. The performance of the small scale wire drawers has recently been reviewed and the Government is now permitting diversification to medium-sector units for drawing mild steel wires upto gauge 12 SWG. In addition, diversification into some special categories of wires, not being produced in the small scale sector, has also been permitted in the organised sector.

4.4.3 The facility of diversifying production into all categories of carbon alloy steel wires has been continued during the year.

4.4.4 During the current year, production has considerably fallen due to shortage in the availability of wire rods. Production of the steel wire drawing units, in the organised sector, in the last three years and first nine months of the current year is as follows:—

	(in thousand tonnes)
1977-78	325.9
1978-79	363.7
1979-80	337.6
1980-81 (Upto Dec., 1980)	228.1
1980-81 (Estimated)	272.2

4.4.5 The capacity utilization of the industry during last year was only 38.3% and it is likely to be lower during the current year.

4.5 PIG IRON:

4.5.1 Apart from the integrated steel plants, there are two units engaged in production of pig iron. The total licensed capacity of these two units is 130.0 thousand tonnes per annum. Production of these two units during the last three years and first eight months of the current year is as follows:—

	('000 tonnes)
1977-78	96.2
1978-79	103.6
1979-80	105.5
1980-81 (Upto Nov., 1980)	63.3
1980-81 (Estimated)	93.4

4.6 SPONGE IRON

4.6.1 So far, only two sponge iron units have been granted Industrial Licences for the manufacture of Sponge Iron. Messrs Sponge Iron India Limited, Kothagudem, Andhra Pradesh, a public sector undertaking, has commenced commercial production and its licensed capacity is 30,000 tonnes per annum. A separate write-up on the plant is included elsewhere in this Report. Messrs IPICOL, Orissa, have been licensed for an annual capacity of 3 lakh tonnes. The Letter of Intent is being implemented by Messrs Orissa Sponge Iron India Limited in collaboration with Messrs Allis Chalmers of USA. With the commissioning of this plant, the annual commissioned capacity in the country would become 1.8 lakh tonnes as only 1.5 lakh tonnes is being implemented by Messrs OSIL presently.

4.7 FERRO ALLOYS INDUSTRY

4.7.1 The ferro alloys industry plays an important role in steel making in the country, catering to the need of the steel plants, Defence, Railways etc., producing input material of steel, such as ferro manganese, ferro vanadium, ferro chrome, ferro silicon, ferro molybdenum, ferro titanium, etc. Today, there are 23 licensed ferro alloys units with a licensed capacity of 3,75,700 tonnes, and of these, 19 units are in operation.

4.7.2 Ferro Alloys Units, whose investment is within the stipulated limit of Rs. 3 crores and who fulfil certain conditions, can start production without an industrial licence. Such units are, however, required to get themselves registered with I & SC, Calcutta. During the current year, 5 such units have been registered and a few more applications are under consideration.

4.7.3 The production of ferro alloys since the beginning of this year suffered set back owing to unprecedented shortage of power, particularly in Orissa and Karnataka. Though high carbon ferro alloys, viz., Ferro Manganese, Ferro Silicon and Ferro Chrome, used to fetch foreign exchange, export was not allowed this year to meet the indigenous demand. Ferro Silicon became such a critical item that its import had also to resorted to. However, with the onset of monsoon and improved availability of power, the production started picking up from July, 1980. At present the ferro alloys units are running satisfactorily.

4.7.4 During the period under review, one ferro silicon unit with a production capacity of 12,000 tonnes per annum has started production from July, 1980. Another unit is ready to go in for commercial production of ferro manganese from the beginning of January, 1981. This will increase availability.

4.7.5 Joint meetings with the producers and consumers of ferro silicon were held to ensure supply of ferro silicon to priority sectors, like SAIL plants, Defence and Railways, etc. The position is being reviewed periodically.

4.7.6 Production of Ferro Alloys during last three years and the first nine months of the year is as follows:—

	('000, tonnes)
1977-78	283.9
1978-79	300.0
1979-80	234.6
1980-81 (Upto Dec., 1980)	194.0
1980-81 (Estimated)	237.9

The industry has recently been given the facilities of endorsement of actual installed capacity and also facilities for automatic growth upto 25% over a period of five years. Applications received for availing the above facilities are under consideration of the Government.

4.8 STEEL STRIPS MANUFACTURING ACTIVITIES

4.8.1 There are 29 cold rolled steel strip manufacturing units. Total licensed capacity of these is 2,47,430 tonnes per annum.

4.8.2 Out of this, one unit with an annual licensed capacity of 5,000 tonnes is yet to come in production and another unit with 5,000 tonnes per annum capacity has recently come into production. Two other units with a total annual licensed capacity of 12,000 tonnes have been closed for a long time. During the year 1979-80, the average capacity utilization of the operating units was about 74%. During the first half of 1980-81, it has come down to 36%, which is the result of lower availability of H.R. Coils from the main producers.

4.8.3 There are 4 hot rolled steel strip units with a total annual licensed capacity of 66,500 tonnes per annum. Out of this one unit with a licensed capacity of 27,500 tonnes per annum has received COB Licence during the year and another with a licensed capacity of 9,000 tonnes per annum was closed during the year. The production of strip manufacturing industry during last three years and the first nine months of current year is as follows:—

	(‘000 tonnes)
1977-78	94.3
1978-79	116.0
1979-80	127.9
1980-81 (Upto Dec., 1980)	81.3
1980-81 (Estimated)	110.6

4.9 TINPLATE INDUSTRY

4.9.1 Excluding Rourkela Steel Plant there are two operating units in the organised sector with a total capacity of 2,20,000 tonnes per annum. Out of this, a capacity of 1,50,000 tonnes is for production of electrolytic tinplate which is entirely dependent on imported raw materials. Remaining 70,000 tonnes capacity is for production of hot dipped tinplate. Dependence on imported raw materials is the main constraint of this industry. These

two units had a capacity utilization of 24.6% during 1979-80 which has declined to 19.1% during first half of 1980-81.

4.9.2 There is another unit holding a licence for manufacture of 20,000 tonnes per annum of hot dipped tinplates. But this unit is defunct for more than 10 years.

4.9.3 The production of Tinplates Industry during last three years and the first nine months of the current year is given below:—

	(‘000’ tonnes)
1977-78	34.1
1978-79	32.5
1979-80	45.0
1980-81 (Upto Dec., 1980)	51.7
1980-81 (Estimated)	68.0

CHAPTER V

5. SUPPLY OF RAW MATERIALS

5.1 IRON ORE:

5.1.1 India is endowed with large reserves of iron ore, both in terms of quantity and quality. The iron ore reserves of the country are presently estimated at 13,500 million tonnes, out of which 10,500 million tonnes are haematite and 3000 million tonnes magnetite.

5.1.2 The production of iron ore in the country during 1980 was 39.0 million tonnes. This was marginally below the production in 1979 which was 39.5 million tonnes. Goa was the chief producer of iron ore during 1980 accounting for 13.6 million tonnes or 35% of the total production followed by Madhya Pradesh with 8.6 million tonnes (22%), Orissa with 6.4 million tonnes (16%), Bihar 5.5 million tonnes (14%), Karnataka with 3.5 million tonnes (9%), and Maharashtra with 1.4 million tonnes (4%). Of this production 38.9 million tonnes were utilised in 1980, 14.8 million tonnes or 38% for internal consumption and 24.1 million tonnes or 62% for export.

5.1.3 Production and despatches for internal consumption and exports for 1978—80 is given below:—

	1978	1979	1980 (Estimated)
Production of iron ore	38838	39544	39 007
Despatches for :			
Internal consumption	16080	15157	14774
Exports	21824	24304	24105

PELLETISATION

5.1.4 Recent trends in blast furnace technology have favoured the use of sinter and pellets produced from iron ore fines instead of lump ore. There are two pelletisation plants operating in the private sector with a total capacity of 1.5 million tonnes. Another pellet plant in the joint sector with a capacity of 1.8 million tonnes installed by M/s Mandovi Pellets Limited has also

gone into production. National Mineral Development Corporation holds 1/3 of the Equity in this joint Sector plant. Its production is earmarked for export to Japan under a long term contract.

5.1.5 In the Public Sector, proposals for the setting up of a 2 million tonnes/year pellet plant at Bailadila (MP) and 3 million tonnes/year plant at Mangalore are under consideration of the Govt.

5.2 MANGANESE ORE

5.2.1 Manganese is a vital and critical input required for production of steel. In the interest of conservation the export of high-grade Manganese ore is banned and export of other grades is permitted within certain ceilings.

5.2.2 The production of manganese ore during the calendar year 1980 was 1.74 million tonnes against 1.75 million tonnes in 1979. As in previous years, the main producers were Orissa (34%), Karnataka (26%), Madhya Pradesh (16%), Maharashtra (13%) and Andhra Pradesh (7%). The remaining 4% was from Goa, Bihar and Gujarat. Of the production, 1.41 million tonnes were consumed internally and 0.424 million tonnes were exported. There has been a decline in export in 1980 as compared to the previous year (0.542 million tonnes) due to lack of demand. Although internal consumption had picked up slightly during the years, the fall in export market has resulted in stocks of ore building up with the producers.

5.3 CHROMITE ORE

5.3.1 Chromium is an important alloying element in ferrous metallurgy, next in importance to manganese. The known reserves of chromite in the country are estimated at 17.3 million tonnes the major part of which (13.84 million tonnes) is located in Orissa. Recent exploratory work conducted by the Geological Survey of India, has revealed a reserve of approximately 31.17 million tonnes of chromite ore in the 'Indicated category' in Orissa. The grade of this ore is generally high but further tests have to be undertaken to finally establish the actual availability and usability of the indicated reserves. The production in 1980 was 304,748 tonnes as compared to 309,769 tonnes in 1979. Orissa continued to remain the leading producer contributing 80% of the total production. Out of the total despatches of 401,971 tonnes in 1980, 255,844 tonnes

went for export. This was higher by 29% compared to the previous year.

5.4 MINERAL DEVELOPMENT BOARD

5.4.1 The erstwhile Iron Ore Board was registered under the Societies Registration Act and came into existence on 20-1-73. The objective and purpose behind inception of the Iron Ore Board was to create a centralised agency for ensuring systematic, coordinated and integrated development of iron ore deposits within the country. Its functions, inter alia, included aspects like the conservation and optimum utilisation of iron ore.

Objective role and Functions of the Mineral Development Board

5.4.2 During the 7 years of its existence, the Board undertook a number of studies. The Board also performed a useful function in bringing together a mass of techno-economic data available with individual agencies, viz. the Geological Survey of India, the Indian Bureau of Mines and the Mining Organisation in the form of inter disciplinary studies. The Iron Ore Board was renamed as the Mineral Development Board on 15-6-79 because of extending its scope to important input materials to the Steel Industry such as manganese, chromite, vanadium, titanium, nickel tungsten, kyanite, sillimanite and magnesite. The Deptt. of Steel vide their letter dated 18-12-1980 authorised the Mineral Development Board to perform similar functions in regard to Tin, tantalum, columbium and cobalt. At present there are a number of agencies engaged in the task of exploration, regulation and mining of these minerals. Similarly, research organisations are also active in the field of mineral processing and their utilisation. It was, therefore, felt that their activities should be coordinated so as to impart to their efforts a productive and project oriented direction. This alone can ensure a stable base of raw materials and intermediates for the steel industry and progressively alter the present profile of export of low value raw ores and import of high value derivatives into a profile of increasing sufficiency and export of processed, concentrated, value added metals and alloys.

Constitution of the Board

5.4.3 The constitution of the Board provides for 15 members, five of them whole time including the Chairman and Member-Secretary and ten part-time members. The Board's expenses are met entirely by Central Government grants.

Activities of the Board

5.4.4 During the year under reference, the Board submitted a report on the Profitability of Iron Ore Export Operations in India on a request from the Committee of Secretaries. The Board completed a study on the Utilisation of Low Grade Manganese Ore in Blast Furnaces. The study brought out clearly that even the Low Grade Manganese Ores could be utilised by the Steel Plants without any detriment to their productivity. The results were disseminated to SAIL and other interested parties for further necessary action. The Board entered into an agreement with Maharashtra State Mining Corporation for commissioning the exploration of Khursipar Vanadi ferrous Magnetite Deposits in Bhandara District of Maharashtra. On completion, it will strengthen the process of extraction of the ferro alloy out of these deposits. With a view to an intensive search for tungsten, which is a critical input in industries manufacturing tools and tool steels, the Board identified projects for intensification of exploration, analysis of samples beneficiation and preparation of production plans for the early materialisation of improved Tungsten supplies. The Board also made some studies of the deposits of Nickel at Sukinda and intends to utilise the services of the I.I.T., Kanpur to assess the characteristics of the Ore for identifying an economic extraction process that would recover all the contained metallic values (Nickel, Cobalt and Iron). The Board has set up a Committee of Experts to supervise sintering of manganese fines. Further the Board co-sponsored two seminars with R.R.L., Bhubaneswar and Mining, Geological and Metallurgical Institute of India, Calcutta an International Symposium on recent advances in Beneficiation and Agglomeration of minerals, and Symposium on Training of Personnel for the Mining Industry.

5.4.5 The Chairman, Mineral Development Board accompanied the team of experts (sponsored by the Deptt. of Science and Technology to study the new iron making processes developed in Sweden. These processes when fully developed are expected to improve the country's capability in critical inputs and in the promotion of the iron and steel industry.

CHAPTER VI

PROGRESSIVE USE OF HINDI

6. GENERAL

6.1. The work relating to the progressive use of Hindi for official purposes in the Department of Steel is looked after by the Hindi Section consisting of a Hindi Officer, four Translators and two typists. The Government's policy relating to the use of Hindi for official purposes as contained in the Constitution, the Presidential Orders, the Official language Act and Rules is being implemented in the Department of Steel. The annual programmes framed by the Department of Official languages in connection with the progressive use of Hindi for official purposes and the general orders issued by them are also being implemented in the Department. In addition, the non-Hindi employees of the public sector undertakings are provided with incentives for learning Hindi by arranging competitions in debates, drama and essay writing. Suitable awards are given to the non-Hindi employees who fare well in such competitions and tests. Noting and drafting in the Hindi Section is done in Hindi. The other sections and the Hindi knowing officers in the Department are also encouraged to write notes and drafts in Hindi.

6.2 With a view to keeping a proper watch over the implementation of the official policy in connection with the progressive use of Hindi for official purposes, inspections of the attached and subordinate offices as well as the public sector undertakings are carried out. The inspection reports are forwarded to the concerned offices for suitable follow-up action on the deficiencies pointed out therein. During the year under review inspections were carried out of the Metallurgical and Engineering Consultants (India) Limited, Ranchi, Bharat Refractories Limited, Bokaro, Manganese Ore (India) Limited, Nagpur, Regional Iron & Steel Controller, Hyderabad, National Mineral Development Corporation, Hyderabad and the Research and Development Wing under Steel Authority of India Limited.

Hindi Typewriters and help literature

6.3 There are 15 Hindi Typewriters in the Department. Help literature has been provided to officers and staff to encourage them to work in Hindi. In order to create interest among

the employees for Hindi, magazines/newspapers in this language have been provided in the Library.

6.4 COMMITTEES RELATING TO OFFICIAL LANGUAGE

(i) Official Language Implementation Committee.

An Official Language Implementation Committee is functioning in the Department. The Committee reviews the quarterly 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. During the year under report, three meetings of this Committee have been held. Similar Committees are also functioning in all Offices/Undertakings of this Department. This effort is backed up by meetings taken by the Secretary himself as and when required.

(ii) Hindi Salahkar Samiti

The Hindi Salahkar Samiti for this Ministry set up vide Resolution No. E.11015/5/77 dated 21-2-1978 is being reconstituted in accordance with the instructions contained in the Ministry of Home Affairs O.M. No. 11/120015/14/77-OL(a.2) dated 16-6-1977 so as to give due representation to the new Lok Sabha, different groups connected with this Ministry and voluntary organisations engaged in the promotion of Hindi.

6.5 TRAINING IN HINDI/HINDI TYPEWRITING/HINDI STENOGRAPHY

A time-bound programme has been drawn up for imparting training in Hindi/Hindi Typewriting/Hindi Stenography to all the employees for whom in-service training is obligatory.

The position regarding training of Government servants in Hindi/Hindi Typewriting/Hindi Stenography in this Department is as under :—

I. Hindi Training.

Total number of employees (Group A, B & C).	203
Total number of employees possessing requisite Hindi qualifications.	149
Total number of employees who have passed Prabodh Praveen and Pragya/Intensive Course/Special Departmental Examination etc.	36
Total number of employees under training	Nil.
Total number of employees yet to be trained	18

II. Hindi Typewriting/Stenography

	Trained	Under Training	Yet to be trained
Hindi Typewriting	7	—	20
Hindi Stenography	7	—	25

6.6 Notification of Offices in the Gazette of India.

Consequent on 80% of the staff having acquired a working knowledge of Hindi, the following offices were notified in the Gazette of India during the current year :

1. Bokaro Steel Plant, Bokaro;
2. Branch Sales Offices of Central Marketing Organisation under Steel Authority of India Ltd. as detailed below :
 1. Kanpur
 2. Faridabad
 3. Agra
 4. Indore
 5. Ghaziabad
 6. Gwalior
 7. Allahabad
 8. Bhilai
 9. Bombay
 10. Baroda
 11. Ahmedabad
 12. Coimbatore
 13. Srinagar
 14. Jullundur
 15. New Delhi
 16. Ludhiana.

The number of offices notified so far comes to 26.

6.7 Some statistical details covering the quarters ending 30-6-80, 30-9-80 & 31-12-80 regarding the use of Hindi in the work of this Department are given below :

- (a) Total number of Hindi communications received from anywhere in this Deptt. 1564
- (b) Total number of communications replied to in Hindi 527
- (c) Total number of communications replied to in English 3

Position regarding originating correspondence.

	Number issued		
	Total	In Hindi.	In English
(a) Letters issued by the office to offices in Hindi speaking regions	344	65	279
(b) Telegrams sent to offices in Hindi speaking regions	4	1	3

Documents issued both in Hindi and English

	Number issued		
	Total	In Hindi & English	In English only
1. General orders.	245	96	149
2. Resolution & Notification.	63	63	—
3. Administrative & other reports.	1	1	—
4. Papers laid before the Houses of Parliament	51	51	—
5. Budget Performance of the Deptt. for the year 1980-81	1	1	—
6. Government reviews on the annual reports	7	7	—
7. Agenda Notes and Minutes of the meeting of Staff Council and Consultative Committee.			—

All Agenda papers and minutes of Staff Council & Consultative Committee meeting were normally issued bilingually.

All India Production of Iron and Steel

APPENDIX—I

('000 tonnes)

Products	1976-77	1977-78	1978-79	1979-80	1980-81 estimated.
1	2	3	4	5	6
(i) Saleable Pig Iron @	2052	1529	1587	1093	1450
(ii) Saleable steel					
I. Mild Steel.					
A. Main Producers.					
(a) Semis.	2018	1920	1615	1635	1940
(b) Flat products plates	705	638	657	670	603
*HR Sheets (10—14G)	187	202	223	219	194
*HR Coils/Skelp	931	891	933	823	730
CR Sheets/Coils/HR					
Sheets (16 G & above)	337	414	417	315	245
GP/GC Sheets.	187	197	195	186	150
Tin Plates.	54	59	58	54	28
Electrical Steel Sheets.	43	61	74	68	69
(c) Non-flat Products.					
Rounds/Flats	695	709	704	638	697
Wire rods	473	480	458	385	357
Structurals	839	936	844	697	717
(d) Railway Materials.					
Rails	319	235	255	214	} 378
Slackers	41	64	50	52	
Wheel, Tyres & Axles	37	39	41	37	
Other railway materials	2	3	15	20	
TOTAL (A).	6867	6848	6538	6013	6108
B. Mini Steel Plants.					
Billet/Pencil Ingot	700	957	1503	1325	1565
II. Alloy & Tool Steels	290	304	387	420	400
GRAND TOTAL	7857	8109	8428	7758	8073

*Includes production of strips meant for Rourkela Pipe Plant.

@Includes production of IISCO which is despatched to their own pipe plants at Kulti/Ujjain.

Note:— Alloy and special steels produced by TISCO is included in "Alloy and Tool Steels".

APPENDIX—II

IMPORT OF IRON AND STEEL* (Quantity in tonnes and Value in Rs. '000)

Category	1978-79	1977-78	1976-77
	(Quantity)		
1. Pig iron, sponge iron etc.	879	1054	500
2. Ferro alloys	5172	1060	526
3. Carbon Steel	795369	321936	219749
4. High Carbon Steel	90037	47993	47860
5. Alloy Steel	164968	58573	47666
6. Rails & Rly. materials	4947	7113	5519
7. Iron & Steel Scrap	206476	56342	35131
TOTAL :	1267848	494071	356951
	(Value)		
1. Pig iron sponge iron etc.	4666	5203	2647
2. Ferro alloys	60930	22394	19706
3. Carbon steel	2386286	1097321	718391
4. High Carbon Steel	357344	194492	192791
5. Alloy Steel	396536	459430	382785
6. Rails & Rly. materials	35348	56536	30025
7. Iron & Steel Scrap	237875	120705	63733
TOTAL :	3878985	1956081	1409988

*Items appropriate to the Department of Steel.

SOURCE : D. G. C. I. S.

Note :— The figures for 1979-80 are still under compilation by Directorate General Commercial Intelligence Services (DGCIS).

APPENDIX—III

Statement showing Category-wise Exports of Pig Iron, Steel and Ferro Alloys during 1979-80 and 1980-81
(April to Dec. 1980—Provisional)

Quantity : In Metric Tonnes
Value : In Rs. Million.

Sl. No.	Category	Exports during 1979-80		Exports during 1980-81 (April—December, 1980)	
		Qty.	Value	Qty.	Value (Prov.)
		44,197	43.125	—	—
I.	Pig Iron				
II.	STEEL :	14,825	21.988	—	—
1.	Billets	28,739	70.940	23,313	54.757
2.	Bars & Rods	141	0.403	1	0.002
3.	Structurals	231	0.931	236	0.800
4.	Rails/Railway material	17	0.047	8	0.024
5.	H. R. Plates	10,685	30.692	16,378	50.171
6.	C. R. Sheets/Coils	80	0.527	55	0.325
7.	GP/GC Sheets	5,855	15.224	—	—
8.	Pipes	86	0.334	—	—
9.	Special/Alloy Steel				
	TOTAL (Steel) :	60,659	141.086	39,991	106.079
	TOTAL (Pig Iron & Steel) :	104,856	184.211	39,991	106.079

100

III. Ferro Alloys (including slag) :	172,886	177.0	10,670	12.240
GRAND TOTAL :	177,742	361.211	50,661	118.319

101

APPENDIX—IV

Category wise Break up of Export of Canalised Ferro Alloys during 1980-81 (April—December, 1980)
PROVISIONAL

Sl. No.	Category	Quantity (M/T)	Value (in Rs. million)
1.	Ferroy-Manganese	—	—
2.	Ferro-Silicon	—	—
3.	Ferro Chrome	2,498	10.649
4.	Ferro Manganese Slag	8,170	1.371
TOTAL :		10,668	12.020

102

MGIPF—1241Steel/80—3-4-81—2500.