E. C. No. 799

ESTIMATES COMMITTEE
(1974-75)

FIFTH LOK SABHA

SIXTY-EIGHTH REPORT

MINISTRY OF ENERGY (DEPARTMENT OF COAL)

Availability and Distribution of Coal

LOK SABHA SECRETARIAT
NEW DELHI

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INTRODUCTION

I, the Chairman, Estimates Committee, having been authorised by the Committee to submit the Report on their behalf, present this Sixty-Eighth Report on the Ministry of Energy (Department of Coal)—Availability and Distribution of Coal.

2. The subject was examined by the Estimates Committee (1973-74) and necessary information obtained and evidence taken by them. The Committee, however, could not finalise their Report during their term of office. The Estimates Committee (1974-75) resumed examination of the subject and after obtaining further information, have come to their conclusions which have been embodied in the Report.

3. The previous Committee took evidence of the representatives of the Ministry of Steel and Mines* (Department of Mines) on the 24th and 25th January, 1974. The Committee wish to express their thanks to the officers of this Ministry for placing before them the material and information which they desired in connection with the examination of the subject and for giving evidence before the Committee.

4. The Committee also wish to express their thanks to Lala Charat Ram, Shri K. N. Modi and Shri G. L. Bansal, President, Vice-President and Secretary-General, respectively of the Federation of Indian Chambers of Commerce and Industry, New Delhi for giving evidence and making valuable suggestions.

5. The Committee also wish to express their thanks to all the Associations and bodies who furnished memoranda on the subject to the Committee.

6. The Report was considered and adopted by the Committee on the 17th December, 1974.

7. A statement giving the summary of recommendations/conclusions contained in the Report is appended to the Report (Appendix XI). An analysis of recommendations is also appended (Appendix XII).

NEW DELHI;
December 18, 1974.
Agrahayana 27, 1896 (*Saka*).

R. K. SINHA,
Chairman,
Estimates Committee.

*Now known as Deptt. of Coal under the Ministry of Energy.

CHAPTER I

INTRODUCTORY

Coal is, by far, the most important source of energy for domestic as well as industrial utilisation. Coal reaches into almost every phase of our daily lives, either directly or indirectly. No doubt it is, to some extent, being replaced by mineral oil, hydro-electric power and atomic fuel but facility of mining and ease of handling are bound to ensure for a long time a steady position for this "potential dynamo" as coal is rightly called. The present oil crisis has imparted added significance to coal.

1.2. In India, the main workable deposits of coal are found in the Permian series, known in India as Gondwana. Geographically, the major part of these coal reserves lies along the 24° north parallel. In this range, coal is mainly bituminous; most of the well known coalfields like Raniganj, Jharia, Giridih, East and West Bokaro, Ramgarh, South and North Karanpura fields in Damodar river valley and also the coalfields of Rewa, Korba, Korea and Orissa lie in this area. In addition to these are the Pench-Kanhan valley coalfields. To the south of these fields are the Wardha valley and Godawari valley coalfields. Isolated patches of Gondwana measures are also found in Assam, Sikkim and Uttar Pradesh. The tertiary deposits producing lignite are mainly found in Tamil Nadu and to a lesser extent in Kerala, Rajasthan, Gujarat, Assam and Jammu and Kashmir.

A. Types of Coal

1.3. Coal can be broadly classified into two categories—Coking and non-Coking. Coking coals are those which have good caking property and which are used in metallurgical industries, mainly as reductants. Again, depending on the quality of coke produced from them, coking coals are sub-divided into prime coking coal, medium coking coal and semi-coking coal. Prime coking coal has a volatile content between 22 per cent and 33 per cent on Unit coal basis; medium between 22 per cent—25 per cent and 32 per cent—37 per cent; and semi coking of a range between 18 per cent and 22 per cent or between 38 per cent and 46 per cent depending upon whether they are of low or high volatile type.

1.4. Coal which is suitable for preparation of metallurgical grade coke required for the Iron and Steel Industry is classified as Coking Coal and Coal which is not suitable for preparation of coke is known as non-coking coal.

1.5. High ash coking coal is beneficiated at Washeries to reduce the ash content. The clean product is used by steel plants and the remnants *viz.*, middlings and sinks are consumed by Thermal Power Stations.

1.6. The main varieties of non-coking coal are steam coal and slack coal, which are used by railways, textile mills, paper industry, cement factories, power houses, brick burning industry etc.

1.7. The main manufactured products from coal are Hard Coke and Soft Coke. Hard coke is used by foundries, engineering industries, sugar mills etc. Soft coke is chiefly used for domestic consumption.

B. Coal Reserves

1.8. The Ministry of Steel & Mines* (Department of Mines) have stated that the total gross reserves of coal in the country are estimated at about 81,000 million tonnes by the Geological Survey of India. The Coking Coal reserves are, however, about **11,400 million tonnes only. After allowing for losses due to the coal locked up in barriers, mining and washing, the net reserves of coking coal that might be available for metallurgical purposes are estimated at about 3,180 million tonnes only in the prime and medium coking varieties. By current estimates, the coking coal reserves are not expected to last for more than 50 years. In the field of non-coking coal, though the reserves are available in adequate quantities, much of them are poor in quality and are unevenly distributed among different regions of the country.

C. Nationalisation of Coal Industry

1.9. The Department has stated that in view of the fact that the coking coal reserves are not expected to last for more than 50 years and due to the reason that the private mine-owners of the coking coal collieries had not been exploiting the mines in a scientific manner, Government took over the management of 214 coking coal mines in the East Bokaro, Jharia and Raniganj coalfields with effect from 17th October, 1971 and subsequently 12 coke oven plants from

*Now called Department of Coal under the Ministry of Energy.

**At the time of factual verification the Department has stated that the gross reserves are estimated at 20, 154 million tonnes.

27th December, 1971 followed by nationalisation of those mines with effect from 1st May, 1972. With that step, the development of metallurgical coal had been brought fully within the public sector, except the captive mines of the private sector steel plants. The rationale for the exclusion of the capative mines of the private sector steel plants from the purview of the Coking Coal Mines (Nationalisation) Act was that such mines were already being operated on scientific lines for meeting the requirements of the steel plants only which incidentally was the main objective of nationalisation.

1.10. The Department has further stated that in the field of non-Coking coal though the reserves are available in adequate quantities, much of them are poor in quality and are unevenly distributed among different regions of the country. Before nationalisation of non-Coking Coal Mines more than 70 per cent of the non-coking coal was produced in the private sector coal mines and 30 per cent was produced by two public sector companies namely National Coal Development Corporation and Singareni Collieries Company Ltd. Production of non-Coking coal in the private sector used to come from the Bengal-Bihar area which contained superior grades of coal and had traditionally been the supplier of good quality coal to distant parts of the country over the years. But many of the collieries in this area had generally been organised in the form of small coal companies whose lack of capital had been a major constraint. Apart from this, the development of the non-coking industry had become a matter of considerable concern. From the point of view of planned development, while the public sector companies had been going ahead with major plans for opening new mines, the private sector had not come forward in adequate measure with new investments and had even been neglecting normal maintenance of their equipment and production. The position became worse, after the take over of the coking coal mines, as there had been a growing apprehension that non-Coking mines would also be taken over by Government. As a consequence, private coal mine owners had been indulging more than ever in unhealthy mining practices with the object of maximising their short term gains. In other words, not only was there lack of effort to make fresh investment for development but there was an imminent danger of even the existing mines being damaged due to improper operations and lack of maintenance. A number of mines had been closed down in the Asansol—Raniganj belt and even those which had been working, were not being worked to their optimum capacity. In addition, it was estimated that for meeting the increasing demand for coal during the Fifth Plan period the additional investments required would be of the order of Rs. 125 crores. Government felt that even if private sector did commit

itself to the increase of production in the Fifth Plan period, it would not be capable of implementing the promise unless Government gave virtually the entire funds required. The increase planned in coal production being the base and foundation for the large scale investments envisaged for power and other sections in the Fifth Five Year Plan, it followed that the task of achieving the massive step up in production could not be left in a state of uncertainty and the non-coking coal collieries must be taken over under public management for this purpose.

1.11. Accordingly, as in the case of coking coal mines, Government took over the management of all the 711 non-coking coal mines on 30th January, 1973 under the Coal Mines (Taking over of Management) Act, 1973. This was followed by complete nationalisation of such mines with effect from the 1st May, 1973 under the Coal Mines Nationalisation Act, 1973.

D. Coal Organisations

(i) *Coal Mines Authority*

1.12. After taking over 711 non-Coking Coal Mines, Government appointed a Custodian General on the 30th January, 1973 his office being known as Coal Mines Authority for the management of the taken over mines. The Government have since set up a fully Government owned Undertaking namely the Coal Mines Authority Limited under the Indian Companies Act, 1956 on 14th June, 1973. The registered office of the company is at Calcutta. The Coal Mines Authority is responsible for the entire gamut of functions in relation to the non-Coking Coal Industry, mainly production, distribution and sales, conservation, safety, development, planning and scientific utilisation of coal resources etc. The National Coal Development Corporation Ltd., has become a subsidiary of this company. Coal Mines Authority Ltd., is also holding the Central Government's shares in Singareni Collieries Company Ltd.

1.13. Coal Mines Authority is responsible for carrying out the following important functions:—

(a) To reorganise and reconstruct any coal mines taken over by the Government of India, take over charge of management of such mines and to operate them on sound commercial principles in order to ensure rational and coordinated development of coal production and to ensure optimum utilisation of capacity in the various projects.

(b) To act as an entrepreneur on behalf of the State in respect of the coal industry and plan and organise production of coal as also its beneficiation and the manufacture of other by-products of coal in accordance with the targets fixed in the Five Year Plans and the economic policy and objectives laid down by the Government from time to time.

(c) To formulate and recommend to the Central Government a national policy for conservation, development and scientific utilisation of the coal reserves of the country and to advise the Government on all policy matters relating to the coal industry.

(d) To develop technical know-how in coal mining and coal washery and undertake applied research and development relating to exploitation of coal deposits as well as utilisation of coal so that dependence on foreign technical know-how is eliminated.

(e) To act as an instrument of policy of the Central Government, subject to such directives as may be issued by the President from time to time, with a view to ensuring control over strategic areas of economy.

1.14. Regarding re-organisation of 711 non-coking Coal Mines which have been nationalised, the Department has stated that control of 527 mines has been vested in the Coal Mines Authority and of the balance 184 fragmented non-coking coal mines in Bharat Coking Coal Ltd., for administrative convenience. The regular working mines coming under Coal Mines Authority are 297. Taking into account 44 working mines of National Coal Development Corporation, the total number of working mines in Coal Mines Authority is 341. All the mines under Coal Mines Authority (including National Coal Development Corporation) except the mines in Assam, have been organised into three divisions as indicated below:—

(a) Eastern division comprising mines in Raniganj, Mugma, Salampur and other coal-fields in West Bengal with headquarters at Asansol/Sanctoria in West Bengal.

(b) Central Division, known as National Coal Development Corporation comprising mines in the Karanpura/Ramgarh, Hazaribagh, Bokaro and Daltanganj, coal-fields in Bihar, Talcher coal-fields in Orissa and Singrauli coal-fields in Madhya Pradesh with headquarters at Ranchi.

(c) Western Division comprising mines in Central India coalfields, Korba and Pench coalfields of Madhya Pradesh, Hingir-Rampur, IB river valley coalfields of Western Orissa and all coalfields in Maharashtra. At present, it operates from Nagpur.

(d) The mines in Assam constitute a separate independent subarea directly under the Head Office at Calcutta.

1.15. The break up of 341 working mines under the control of Coal Mines Authority is as under:—

	Eastern	Western	Central	Assam	Total
Take over Mines . . .	215	45	34	3	297
N.C.D.C. Mines .	..	16	28	..	44
	215	61	62	3	341

1.16. The Department has further stated that each division is headed by a Managing Director, who is responsible to the Board of Directors for managing the division in accordance with the Board's policy directives. Under each Division, there are Areas, Groups and Projects/Collieries. For having continuous control on production, planning, development costs, industrial relations, material management, marketing and sales, the Managing Director has a Managing Committee under him representing all Heads of Departments. He is also assisted by an Advisory Committee, consisting of, among others, representatives of the concerned State Governments, Railways and the workers. This Committee acts as a consultative body and advises the Managing Director in various matters relating to the performance of the Division. The Division is required to determine the objectives for each of the Areas, the Groups and the Projects/ Collieries in the Division and to ensure that the programme laid down is implemented satisfactorily. Each Division has a four tier organisation consisting of Managing Director, Area General Manager, sub-Area Manager and Colliery Manager. Each area will control production of about 2 to 3 million tonnes per annum except where the Areas are geographically located in isolated places. Each sub-Area will have a production of one million tonnes per annum. The Area General Manager and sub-Area Manager are assisted by a Managing Committee at the respective levels. Such Managing Committee have similar functions as those at the Division level.

(ii) *National Coal Development Corporation*

1.17. The National Coal Development Corporation was set up in 1956 as a wholly Government owned company. The Corporation is operating 44 collieries including 11 collieries under development, four washeries and one coke oven plant. The Corporation has achieved a built-up capacity of 18 million tonnes per annum. National Coal Development Corporation is now a subsidiary of the Coal Mines Authority.

(iii) *Singareni Collieries Company*

1.18. The Singareni Collieries Company was incorporated in 1920. It became a Government Company in 1956. Excluding a small portion worth about Rs. 4 lakhs, all the shares in the company are held by the Government of Andhra Pradesh and the Government of India in the proportion of 55:45. The company has 24 working mines spread over three districts of Andhra Pradesh. The shares of the Government of India in this company are held by the Coal Mines Authority Ltd.

(iv) *Bharat Coking Coal Ltd.*

1.19. The Bharat Coking Coal Ltd., was incorporated as a Government Company under the Indian Companies Act, 1956 on 1-1-1972. The registered office of the company is at Sijua, Dhanbad. 214 coking coal mines were taken over by Government from 17-10-1971 and 12 coke oven plants from 27-12-1971. The Central Government appointed Bharat Coking Coal Ltd., as the custodian of all Coking Coal Mines and coke oven plants taken over by the Government with effect from the 12th January, 1972. These mines/plants were nationalised from 1-5-1972. The Bharat Coking Coal Ltd., is now responsible for the entire gamut of functions in relation to the coking coal industry, mainly production, distribution and sales, conservation, safety, development, planning and scientific utilisation of coking coal resources etc. Management of 184 fragmented non-coking coal mines is also vested in Bharat Coking Coal Ltd. for administrative convenience. The Bharat Coking Coal Ltd., has become a subsidiary of the Steel Authority of India Ltd.

(v) *Coal Controller's Organisation*

1.20. The Coal Controller's Organisation is a subordinate office under the administrative control of the Department of Mines. This Organisation is entrusted with the task of ensuring equitable distribution of coking and blendable coals for metallurgical consumers

and advising the Ministry of Steel and Mines in regard to administration of Mines and Minerals (Regulation and Development) Act, 1957 and Industries (Development and Regulation) Act, 1951 in so far as coal is concerned. The Coal Controller also administers the scheme of subsidy on coal moved by rail-cum-sea route. Under this scheme, the consumer who gets coal by the rail-cum-sea route will receive as subsidy a sum almost equal to the difference between the actual cost of transport and the calculated cost by the all-rail route.

(vi) *Coal Board*

1.21. The Coal Board is a statutory body under the Coal Mines (Conservation, Safety and Development) Act, 1952 for the promotion of measures for safety in coal mines and conservation and development of coal resources. Extending assistance to collieries for stowing continues to be the main responsibility of the Coal Board in pursuance of its statutory functions to promote the conservation and safety in coal mines. The Coal Board also grants assistance to collieries handicapped by adverse factors. In addition, protective works are also undertaken or assisted by the Coal Board for the prevention of spread of fire in mines, inundation of mines with water from an adjacent area or for the prevention of fire or flooding.

1.22. The Coal Board has also installed five aerial ropeways in the Jharia and Raniganj coalfields for the transportation of sand from rivers Damodar and Adjoy to coal mines for purposes of stowing with a view to augmenting the output of coal as also to ensure conservation of high grade coking and non-coking coals.

1.23. The ropeways for the transport of sand to the mines have, however, been transferred from the Coal Board to the Bharat Coking Coal Ltd., and Coal Mines Authority with a view to improve their utilisation.

1.24. The Coal Mines (Conservation and Development) Act, 1974 which repeals the Coal Mines (Conservation, Safety and Development) Act, 1952 provides for the dissolution of the Coal Board. On the dissolution of the Coal Board, the Central Government would assume control over the regulation and development of the coal mines and all rights and privileges of the Coal Board shall become the rights and privileges of the Central Government.

1.25. The Committee note that with the nationalisation of the coking coal mines on 1-5-1972 and the non-coking coal mines on 1-5-1973 all the coal mines in the country except the captive mines of the private sector steel plants are under Government control and

management to facilitate coordinated, rational and scientific development of the coal resources of the country. The management of 214 coking coal mines and 12 coke oven plants has been vested in the Bharat Coking Coal Ltd., a Government Company, which is functioning as a subsidiary of the Steel Authority of India Ltd. The management of 711 non-coking coal mines, is vested in the Coal Mines Authority Ltd., a Government Company, which also holds Central Government shares in the Singareni Collieries Ltd. The existing National Coal Development Corporation Ltd., is also its subsidiary. The Committee also note that for administrative convenience, 184 fragmented non-coking coal mines have been brought under the management of Bharat Coking Coal Ltd. Both the Companies are responsible for the entire gamut of functions in relation to the coal mines coming under their control, mainly production, distribution and sales, conservation, safety, development, planning and scientific utilisation of coal resources etc. Moreover, under the Coal Mines (Conservation and Development) Act, 1974 the Coal Board which is responsible for the promotion of measures for safety in coal mines and conservation and development of coal resources is being dissolved and the control assumed by the Central Government through the two Government Companies.

1.26. The Committee consider that nationalisation of coal mines is an epoch making step and marks a new era for the development of coal mining in the country in the overall interest of the nation. Coal is the most important and crucial indigenous source of energy. It is a national asset on which the manufacturing industries and economic expansion of the country largely depend. Basic industries like iron and steel depend on coal. A large part of power generation is coal-based. Construction inputs such as cement and bricks require coal. The present oil crisis has further underlined the importance of coal and added a new urgency to the task of stepping up coal production rapidly. The Committee feel that nationalisation of coal mines has afforded not only new opportunities but also posed new challenges to the Government and management to meet the increasing requirements of coal in the coming years. Urgent attention is required to be given not only to ensure rational and coordinated development of coal production in the country but also to promote optimum utilisation of coal resources, consistent with the growing requirements of the country. Coal mines have to be reorganised and restructured and are to be worked on modern scientific lines by paying special regard to conservation and safety of mines and welfare of the workers.

1.27. There is an urgent need for rapid step up in the production of coal in the country. The increased production of coal envisaged

for 1978-79 will call for not only large scale investment but concerted organisational efforts by the Coal Mines Authority and Bharat Coking Coal Ltd. Suitable advance action is, therefore, to be initiated to meet the targets of increased production of coal during the 5th Plan period which is pre-requisite for the achievements of planned targets in vital sectors such as power and transport etc., in the 5th Plan. Advance plans for future expansion have also to be drawn up. Other tasks which require to be attended to urgently by the management of nationalised mines, inter-alia, are:

(i) Evolving of a suitable managerial structure;

(ii) Strengthening of distribution system to serve the interests of both the producers and the consumers;

(iii) Elimination of malpractices;

(iv) Supplying of suitable quality of coal to consumers at reasonable prices;

(v) Working out appropriate linkage between bulk consumers and coal fields as well as special arrangements for domestic consumers; and

(vi) Streamlining of transport arrangements for movement of coal etc.

1.28. The Committee realise that these tasks are challenging but they can be overcome by farsighted, sustained and dedicated efforts on the part of management. The Committee would like to stress that nationalisation of coal mines would have a meaning only if the objectives behind nationalisation i.e., coordinated, rational and scientific development of coal industry in the country, massive and rapid increase in coal production to meet the needs of consumers, conservation and optimum utilisation of coal reserves etc., are fulfilled.

CHAPTER II

DEMAND FOR COAL AND ITS ASSESSMENT

A. Demand for Coal during Third and Fourth Plans

The demand for coal at the end of the last year of the Third and Fourth Five Year Plans was assessed at @98.55 million tonnes and @100.19 million tonnes respectively.

The details of the sector-wise demand and the consumptions thereagainst are as follows:—

(Figures in m. tonnes)

Sector	Third Plan			Fourth Plan		
	Demand	Actual consumption in 1965-66	Percentage of (3) to (2)	Demand	Estimated consumption 1973-74	Percentage of (6) to (5)
1	2	3	4	5	6	7
1. Steel	25·40 (25·8%)	13·07 (19·4%)	51%	26·50 (26·4%)	15·00 (19·0%)	57%
2. Coke Ovens	2·03 (2·0%)	1·22 (1·8%)	60%	4·02 (4·0%)	3·00 (3·8%)	75%
3 Power Stations .	10·16 (10·3%)	8·60 (12·9%)	84%	21·88*a* (21·9%)	19·50*b* (24·7%)	89%
4. Cement .	4·57 (4·6%)	2·94 (4·4%)	64%	6·61 (6·6%)	4·20 (5·4%)	64%
5. Railways	21·34 (21·7%)	17·34 (25·8%)	81%	13·40 (13·4%)	14·50 (18·3%)	108%
6. Export .	2·50 (2·7%)	0·80 (1·2%)	32%	0·62 (0·6%)	0·60 (0·8%)	97%
7. Soft Coke	4·57 (4·6%)	2·73 (4·0%)	59%	4·50 (4·5%)	4·00 (5·0%)	88%
8. Brick Kilns .	4·57 (4·6%)	3·65 (5·4%)	80%	4·50 (4·5%)	3·00 (3·8%)	67%

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1	2	3	4	5	6	7
9. Others (including colly. consumption losses in coke making and washing).	23·41 (23·7%)	16·85 (25·10%)	72%	18·16 (18·10%)	15·20 (19·2%)	84%
Total	@98·55	67·20	67%	@100·19	*79·00	79%

(Figures in brackets indicate percentage to total).

a. Excluding 6.5 million tonnes of middlings.

b. Excluding 1·5 million tonnes of middlings.

2.2. The Department has stated that the Coal demand of the various consuming industries during the Fourth Five Year Plan was assessed by the Planning Group on Coal set up by the Department of Mines in March, 1968, in pursuance of a directive from the Planning Commission. The Planning Group consisted of representatives of different Ministries, the Planning Commission, Research Institutes connected with coal and the representatives of the coal industry (both Public and Private Sector). The various consuming sectors were divided into six areas of demand, each of which was studied intensively by sub-groups constituted by the Planning Group. Another two sub-groups, studied the "Built-in-capacity" and the "Resources and Investment" for the coal programme. The agencies concerned with production, transportation and consumption of coal were represented on the sub-groups. The Sub-Group on demand took into account, the past trends of coal consumption, the availability of facilities for transport of coal, the latest available data regarding the consuming sectors, norms of coal consumption, time-lag in the units reaching the capacity production programme etc. Forecasts received from the State Governments about the growth in sectors primarily under their control and the guide-lines spelt out by the Planning Commission in their "Approach to the Fourth Five Year Plan" document were also kept in view. For sectors in respect of which individual units could be identified, such as Steel, Thermal Power Stations, cement factories, fertilisers, etc. the demands of such units were carefully gone into individually. For other sectors, such as soft coke, brick burning, small scale industries for which the same method could not be adopted, an average rate of growth was assumed.

@Production target fixed at 97 million tonnes in the Third Plan and 93·5 million tonnes in the Fourth Plan.

*Actual production 77·872 million tonnes in 1973-74.

2.3. The picture that emerged as a result of adding up these estimates placed the total demand for coal by 1973-74 at a little over 100 million tonnes. This estimate was considered by the Coal Advisory Council at its meeting held on 19th July, 1968 and in the light of the discussion at the meeting, the overall demand for coal by 1973-74 was fixed at 93.5 million tonnes.

2.4. The Committee note that the demands for coal by the end of Third Plan viz., **1965-66 and by end of the Fourth Plan** viz., **1973-74, were assessed at @98.55 million tonnes and @100.19 million tonnes respectively, whereas the actual consumption was 67.20 million tonnes and 77.87 million tonnes respectively. The Committee are concerned to note that the shortfalls in consumption** vis-a-vis **assessed demands during the Third and Fourth Plans were of the order of 33 per cent and 21 per cent respectively.**

2.5. The Committee note that the assumptions underlying the assessment of demands have been based on the past trends of coal consumption, the availability of facilities for transport of coal, the latest available data regarding the consuming sectors, norms of coal consumption, time-lag in the units reaching the capacity, production programme etc. For sectors in which this method could not be adopted, an average rate of growth was assessed. In the opinion of the Committee, the wide gap between projections and performance calls for a critical and analytical review of the system of assessment of demands. The Committee consider that a sound system for collection and evaluation of data regarding demand is pivotal for fixing plan targets on a realistic basis. A critical study of the areas in which the basic assumptions were found to be wide off the mark would be very revealing and should be undertaken without delay so as to throw up objective lessons for realistic assessment of demand at least for the current plan period which has only commenced in April last.

B. Actual consumption vis-a-vis assessed Demands by major sectors during Third and Fourth Plans

2.6. The Department has stated that in the Third Plan, large shortfalls occurred in coal demands of steel plants, power stations, cement factories, Railways and industries. The reasons for the shortfall were mainly the shortfalls in the achievement of the targets of production of the consuming industries. The dieselisation programme of the Railways and the use of furnace oil by certain industries, like

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@Production targets fixed at 97 m.t. in the Third Plan and 93.5 m.t. in the Fourth Plan.

cement and textiles, also contributed to the decrease in the demand for coal. The targets of production and actual achievements in the Third Plan of the major coal consuming sectors are given below:—

Sector	Third Plan target	Actual achievement in 1965-66	Percentage short fall
1	2	3	4
1. Steel (Ingots)	9·2 m. tonnes	6·5 Mt.	29%
2. Power (Installed capacity . . .	12·7 MKW	10·2MKW	20%
3. Railways (freight traffic) . . .	245 m.t.	203 m. tonnes	15%
4. Cement	13 m.t.	10·8 M.t.	17%
5. Cotton textile (mill made)	5800 m. metres	440 m.metres	24%
6. Papaer and Paper Board . . .	700 thousand tonnes	560 thousand tonnes	20%

2.7. In the Fourth Plan also, the actual demand for coal has fallen far short of the plan estimate in sectors like Steel and Power. The Fourth Plan targets of production and likely achievement in 1973-74 are given in the table below:—

Sector	Fourth Plan target	Likely achievement in 1973-74	Percentage shortfall
1	2	3	4
1. Steel (Ingot)	10·8 m. tonnes	7·0 m.tonnes	35%
2. Power Installed (capacity) . .	21MKW	17·4 MKW	17%
3. Railways (Freight traffic) . .	265 M. tonnes	192m. tonnes	27%
4. Cement	18 m. tonnes	15·5 m. tonnes	14%
5. Cotton Textiles(Mill-made)	5100 m. metres	4200 m. metres	18%
6. Paper and Paper Board . . .	850 thousand tonnes	830 thousand tonnes	2%

2.8. Explaining the variations between the Demand assumptions and actual achievements, the Secretary of the Department informed the Committee, during evidence as follows:—

> "The growth rate which was postulated in the earlier periods never materialised. Our experience in the Second and Third Plans was whatever was targetted did not actually materialise. It is because of this that the demand for coal

did not materialise. And because of the lack of demand, there had to be a cut back in production."

2.9. The Secretary of the Department further observed:—

"In the Fourth Plan document we accepted 7.7 per cent to be the rate of growth in the industries sector but actual growth has been 5 per cent in 1969-70. In 1970-71, it was 1.8 per cent, in 1971-72 it was 2.9 per cent and in 1972-73 it was 4.2 per cent. In 1969, the arithmetic total of 100 million tonnes was estimated for 1973-74. The requirement of coking coal by the steel plant and coke oven was shown as 30.52 million tonnes. That demand has now come down. Even in January, 1973 it was estimated at 20.9 million tonnes but now we expect that it will only be about 18 million tonnes. Therefore, the demand in all sectors has come down. Similarly, there are other sectors such as colliery consumption, soft coke making and loss in washing. The Planning Group in 1969 had estimated it at 18.16 million tonnes. Now our latest estimate is that it will only be 14.7 million tonnes."

2.10. The Committee note that according to the Secretary of the Ministry, the original assumptions of demand for coal did not materialise because of the shortfalls in the achievements of production targets by the major consuming industries whose demands for coal form a significant proportion of the total demands. The Committee further note that the growth rate in the industries sector which was assumed to be 7.7 per cent in the Fourth Plan, was not achieved. Against this, the actual growth rate has been 5 per cent in 1969-70, 1.8 per cent in 1970-71, 2.9 per cent in 1971-72 and 4.2 per cent in 1972-73. The Committee consider that while in some cases the 'cut back' in production of coal may be due to the lack of demand as emphasised by the Secretary of the Department this may not be true in respect of all sectors of industries where production may have fallen due to non-availability of coal. This again underlines the need for a more scientific system of assessment of likely demand for each major sector of industry so as to ensure that the demand estimates are as realistic as possible. The Committee consider that there is great scope for framing demand estimates more realistically in respect of major identifiable sectoral consumers like steel, thermal power stations, Railways, cement factories etc., which account for the bulk of the total demand for coal in the country. In this connection they feel that the problems, besetting the steel sector, where coal consumption was reduced by over 40 per cent of the original estimates,

could have been well anticipated by closer statistical analysis. The Committee urge that a rational and scientific system should be evolved for assessment of demand for coal, based on modern methods of statistical analysis, integrating it with the actual and anticipated patterns of consumption, in all sectors of the economy so that wide variations between assessed demands and actual consumption are reduced to the minimum. Moreover there should be a system of continuous assessment of demands for coal, particularly for major industries so that advance action could be taken to adjust production and the requisite transport facilities with the likely demands for those industries.

C. Shortfalls in meeting requirements in certain sectors

2.11. The Committee enquired about the reasons for the atmosphere of coal scarcity obtaining in the country in spite of the fact that the actual requirements had fallen short of the demands as originally assessed while formulating the Plan. The Secretary of the Department stated during evidence:—

> "What has happened is, the rate of growth in particular sectors is not as much as it was expected to be. Each one of them has grown in a different way, I am aware there is a certain amount of shortage in certain sectors but this shortage is not anything phenomenal, it is a very small shortage....."

> "The growth rate as was originally expected has not taken place due to various factors but definitely not all of it on account of lack of coal."

> "So far as production itself is concerned, it is not far behind the demand. But unfortunately, the availability is far less because there are certain gaps between production and the availability at the consumer ends. Take, for instance, power. The power sector's requirements during the last one year went up by 3.6 million tonnes, which in the normal circumstances, would not have come about. This has to be met from within the available coal and available transport position. Then there were disturbances and other things in the eastern sector which were witnessed in 1971-72".

2.12. Elaborating the position, the Secretary added:—

> "In the case of power sector, on account of extreme drought conditions created last year, the demand on the power sta-

tions to provide power was much more than what was previously anticipated. If you take the amount of coal which was supplied and the sudden demand which came up last year, it created constraints on the availability of coal for other sectors. This increased quantity had to be transported in order that the power supply might not be disrupted and consequently we could transport less quantity of coal to other sectors."

2.13. The Committee enquired about the reasons why coal was not available even to the Railways at times. The representative of the Ministry of Railways stated that Railways used steam coal, which was also required by important consumers like textile, aluminium and others. So the coal had to be shared with the other industries. The demand of some of the industries was also going up rapidly. Unfortunately, troubles in the Railways from July onwards affected the railway transport capacity for the movement of coal including railway coal. Production was also affected due to heavy rains. As a whole, they had to share the available steam coal between railways and the different industries to keep the industries going. In consequence certain railways had to discontinue temporarily some of the branch line train services. But they did not allow the main services as well as the goods services to stop.

2.14. Summing up the position, the Secretary of the Department stated:—

"So far as consumption of non-coking coal is concerned, the demand has considerably gone up faster than for coking coal, secondly, there are certain new demands from some factories which have been started recently. Also some of the power stations which previously used to take middlings have started using raw coal. Therefore the demand for middlings has come down and the demand for coal has gone up. Consequently the demand in all sectors is not being fully met."

2.15. It was further stated that so far as thermal Power stations were concerned, these were not allowed to suffer.

2.16. It was admitted that one area of shortage was domestic sector and the shortage was going to grow. The Secretary of the Department added:—

"There is foreign exchange trouble because of oil crisis and

difficulty about supply of kerosene. We have to see that this particular sector is fed with large quantities of domestic coke so that dependence on kerosene would go down. This is one of the areas where we can save foreign exchange. We have to make conscious effort to see that this particular sector gets enough supplies and we hope in the coming months we will be able to do something."

Presently the supply was 2 million to 2½ million tonnes against a demand of 5 million tonnes.

2.17. Asked whether planning was being done to remove the shortfall, the Secretary stated:—

"Soft coke can be manufactured in 4 days. It is just a burning process and getting the stuff loaded. The difficulty is in movement. That is, reaching the consumers. To some extent in North Bihar itself there were shortages but by and large this is now met. U.P., Delhi, Haryana, Punjab are areas which are far away from producing centres. They have to be reached through wagons and there has been some difficulty. We should try to overcome this in due course. We have to pick up the supply to 4½ to 5 million tonnes. This is what we are trying to do and there should be no difficulty in doing it. Coal is available, it needs only conversion; within 4 or 5 days you can do it."

2.18. Summing up, the Secretary of the Department stated:—

"Probably, there would be a shortfall from demand by about 4 to 4½ million tonnes..... There has been no serious shortfall in supply of coal to consumers except during the past one year."

2.19. The Committee note that against the assessed demand of 100.19 million tonnes of coal during 1973-74, the actual consumption during 1973-74 was 77.87 million tonnes—pointing to an over-assessment of demand by 22.32 million tonnes. The Committee further note that the shortfalls are attributed to decline in the demand as they actually materialised in sectors like steel and power. The Committee are, however, concerned to note that there is an atmosphere of scarcity of coal in certain other consuming sectors. In fact, the Secretary of the Ministry also admitted during evidence that availability of coal is far less in certain sectors because of gaps between production and availability at the consumer ends. The Committee are not convinced by the explanation that there was unexpected

growth in the demand of power sector due to extreme drought conditions and increased demand of coal in preference to middlings which created contraints in the availability of coal to other sectors. In fact, the Committee find that against the assessed demand for coal for the power sector at 21.88 million tonnes at the end of the Fourth Plan, the estimated consumption in 1973-74 was only 19.50 million tonnes i.e., a shortfall of 2.38 million tonnes. Since the actual consumption of coal by power stations was much less than the planned demand, the plea that there has been unexpected growth in the demand of power sector is not tenable.

2.20. The Committee have been informed that the main area of shortage was the domestic sector and that this shortage was likely to grow because of increase in demands caused by oil crisis.

2.21. In addition, the Railways had also to discontinue temporarily some of the branch lines train services as steam coal had to be shared by them with some other important industries whose demands were going up.

2.22. There was also lack of adequate supply of coal to the cement industry as would be seen from the observations contained in Paras 2.18 to 2.36 of the 60th Report of the Estimates Committee on "Availability and Distribution of Cement".

2.23. It has, however, been admitted that the overall shortage of coal for 1973-74, taking into account all consuming sectors, was about 4½ million tonnes.

2.24. The Committee consider that the reasons advanced by the Ministry, do not fully explain the paradox of shortfall in consumption of coal by certain sectors of industries as compared to the Plan target and lack of availability of coal to the tune of about 4½ million tonnes, in some other sectors. The Committee cannot help arriving at the conclusion that one of the basic factors for this state of affairs, is the lack of a sound system of collection and evaluation of data regarding demand estimates of the various sectors and their periodical review so as to plan and adjust production in time according to the demand of coal by these sectors. Had this been done, it should have been possible to arrange production of right type of coal to suit the particular requirements of these consumers and arrange for its movement by advance planning. It appears that while the demands from some major sectors have been over-pitched, the demands from sectors like small industries, brick-kilns and domestic

consumers etc., have been assessed only on ad hoc basis with the result that overall assessment of demand for coal was over-estimated in some sectors and under-estimated in other sectors. As has been pointed out in a subsequent section, there was no specific machinery to assess the demand of coal in respect of hard coke, sofe coke and requirements of the small scale industries brick kiln industries etc. falling under the purview of the State Government.

2.25. The Committee recommend that in the light of experience gained, Government should devise a system of scientific assessment of demand, in close coordination among all agencies concerned viz., coal mining, major consumers, transport etc., taking into account foreseable developments in the various sectors. The intention is that the supply of coal should always be a little ahead of requirements and that, in no case, a climate of scarcity should be allowed to be developed, leading to various difficulties.

D. Demand for Coal during Fifth Plan

2.26. The Department has stated that the demand for coal in the Fifth Five Year Plan was assesed by a Task Force on Coal and Lignite set up by the Planning Commission in 1972. The Task Force had set up a sub-Group for the assessment of coal demand and diversification of uses. This Sub-Group held discussions with the major users of coal like the steel plants, railways, power houses and cement factories etc. and made an assessment of demand based on the Draft Fifth Plan Programmes for these industries as known at that time. Other relevant factors such as the practicability of achieving the programme, the time-lag involved in the attainment of capacity by the consuming units, the norms of coal consumption and the technological improvement etc. were taken into account and the coal demand assessed for individual units in the following sectors namely:—

(a) Thermal Power Stations.

(b) Steel Plants.

(c) Cenment Factories.

(d) Fertilizers Factories.

2.27. In the case of the Railways, the diminishing demand for coal, consequent on electrification and dieselisation was taken note of.

2.28 For major industries, the estimated production in 1978-79 as given by the Perspective Planning Division of the Planning Com-

mission and the norms of coal consumption suggested by the Directorate General of Technical Development were adopted. For other industries and for brick kilns, a rate of growth of 6 per cent per annum which was somewhat lower than the industrial growth rate envisaged in the Draft Fifth Plan was adopted for assessing the demand for coal. The Task Force agreed in principle with the views expressed by the Fuel Policy Committee that the consumption of soft coke should be increased at the rate of 15 per cent per annum but considering the practical limitations in making available adequate transport, the demand was placed at a somewhat lower level.

2.29. The break-up of the demand of the various categories of consumers by the end of the Fourth Plan as assessed by the Committee on Assessment of Demand and in the Fifth Plan as assessed by the Task Force on Coal and Lignite are given in the Statement below:—

(Figures in m. t.)

	Consumers	Demand as finally fixed for 1973-74		Demand by 1978-79	
1.	Steel Plants	20·50	(Raw Coking & blendable Coal)	27·4	(Raw coking and blendable Coal)
2.	Coke Ovens	3·16		5·4	,,
3.	Power	18·77	(excluding 4·8 m.t. of middlings)	45·0	(excluding 6·5 m.t. of middlings)
4.	Railways	13·40		13·0	
5.	Cement	6·45		7·0	
6.	Fertiliser	0·90		4·5	
7.	Soft Coke & LTC	6·36		8·7	
8.	Textile	2·20		2·5	
9.	Paper	2·40		3·5	
10.	Export	0·62		1·0	
11.	Brick	6·99		7·5	
12.	Others	11·70		13·5	
13.	Colliery consumption	—		4·0	
		93·50		*143·0	

*Tentatively revised to 135 million tonnes.

2.30. The Fuel Policy Committee appointed in October 1970 submitted in May, 1972 Part -I of its report entitled 'Fuel Policy for the Seventies' to enable the Government to take investment decisions connected with the energy sector for the Fifth Plan. Based on the perspective Plan targets included in the Fifth Plan, the Committee estimated the demand at the end of the Fifth Plan for the different sources of energy as below:—

Coal	164·5 million tonnes (including 56·5 million tonnes for power generation).
Oil Products—energy	36·96 million tonnes (including non-products and refinery losses).
Electricity	125 million KWH (at the consumers end corresponding to generation of 156·5 billion Kwh).

2.31. The Department has stated that the Task Force on Coal and Lignite set up by the Planning Commission assessed the demend for coal by 1978-79 at 143 million tonnes and a target of 135 million tonnes has since been fixed tentatively in the draft Fifth Five Year Plan. The production of coal in 1973-74 is expected to reach the level of *80 million tonnes. The overall increase to be attained in the Fifth Plan therefore works out to *55 million tonnes, which represents an increase of about *69 per cent over the anticipated production in 1973-74.

2.32. In a note furnished to the Committee the Department of Mines has stated that in view of the present oil crisis, the Government is considering proposals to reduce the consumption of oil products and substitute them by coal wherever possible. For this purpose, the Planning Commission has appointed a number of Working Groups to study the feasibility of substitution and to suggest plans of action for reducing oil consumption. The subjects to be studied by the various Working Groups are given below:—

(i) primary fuel substitution in power house boilers.

(ii) secondary fuel substitution in power house boilers-evening out of load curve and maintenance of operation.

(iii) fuel substitution in industrial boilers,

(iv) reduction of fuel consumption in steel industry.

(v) Development of new boilers.

(vi) coal gassification at existing plants at Calcutta (including Durgapur) and Bombay.

*actual production is 77·87 million tonnes, overall increase 57·13 m.t., per centage increase 73·0%

(vii) installation of pilot gassification plant.

(viii) installation of Low Temperature Carbonisation plant at Singareni.

(ix) installation of L. T. C. plant at Calcutta.

(x) study for gassification plants.

(xi) substitution of fuel oil in power boilers as secondary fuel by coal gas produced from captive gas plants.

(xii) reduction in the use of naptha as a fuel in fertiliser plants.

(xiii) Substitution by rail movement of long distance operation of commercial auto-vehicles.

(xiv) replacement of fuel oil by coal as feed stock for fertiliser plants.

(xv) problem of coal washeries.

(xvi) problem of urban waste.

(xvii) problem of rural waste.

(xviii) possibility of new energy sources.

(xix) transportation and distribution of coal.

2.33. The Working Groups were required to submit their reports by 28th February, 1974. The Planning Commission will take an integrated view of the measures for consumption of oil including substitution by coal, in various industries after the reports are received and examined.

2.34 In the meantime, the Standing Committee on Furnace Oil, which had been set up by the Ministry of Petroleum and Chemicals some time back for making the allocations of furnace oil to the various industries has also set up a Sub-Committee to suggest the phased programme of change over of various industrial consumers from furnace oil to coal. Steps have been taken to link the coal requirements of Trombay, Barauni and Ahmedabad 'C' power stations which are using oil. Supply to the first two power stations has already started. Coal supplies to Ahmedabad 'C' will be effected from September, 1974 when the power station is expected to complete the conversion of its boilers. The Standing Linkage Committee has also considered the cases of other power stations like Obra, Patratu and Ennore which were using substantial quantities of furnace oil as a secondary fuel and the linkage of coal has been made so that this can be minimised. As regards the various

industries which would require coal conversion from furnace oil, a phased programme would have to be put through consistent with the availability of coal from national sources and the transport capacity.

2.35. The additional requirements of coal as a result of the shift from oil will have to be worked out in a detailed manner after the Working Groups have completed their reports. Approximately, it may be stated that about 1 million tonnes of coal would be required immediately for industries (excluding power houses) which can switch over to coal without major modifications.

2.36. For 1974-75, the Department has proposed a coal production programme of 95 million tonnes which is †16 million tonnes more than the expected achievement of *79 million tonnes in the current year. If this quantity of coal is produced and transported, it is expected that the immediate additional requirement of coal consequent on the oil crisis would also be met satisfactorily.

2.37. It has been stated in a further communication received from the Department that the reports of the Working Groups appointed by the Planning Commission to study the impact of the energy crisis on the Fifth Plan Programme are under examination by the Planning Commission.

2.38. The Department has also stated that a revised programme for 145 million tonnes has been submitted in the light of the energy crisis.

2.39. The final Report of the Fuel Policy Committee regarding assessment and forecast of future demand for energy was presented to Government on August 22, 1974. That Committee has given several demand forecasts for different forms of fuels, which take into account inter-fuel substitution possibilities even when the aggregate energy requirement may remain constant.

2.40. That Committee has considered coal as the primary source of energy in the country for the next few decades and the energy policy of the country has to be decided on this basic premise.

2.41. It has been stated that the estimates of coal demand forecast for those purposes in their report should be taken as somewhat conservative. In their estimates of coal demand that Committee

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†actual increase 17·13 million tonnes.

*actual production 77·87 million tonnes.

has stated that they have taken note of the anticipated levels of production of different major commodities in the industries sector and the possible changes in the technology of their production. They have also provided for increasing efficiency of use of fuel in all sectors of the economy and the progressive substitution of coal as a feedstock for nitrogenous fertiliser production and as a fuel in the industries sector in replacement of oil. A fast rate of growth in the use of soft coke and low temperature carbonised coke as domestic fuels has also been provided for.

2.42. That Committee has estimated demand for coal in 1978-79 as follows:—

(in m.t.)

Estimates	Case I	Case II	Case III
Energy use	132·0	137·8	142·8
Non-energy use	3·0	3·0	3·0
Total	135·0	140·8	145·8

2.43. The sectorwise demand for coal as forecast by the Fuel Policy Committee is given below:—

(in million tonnes)

Consuming Sector	1978-79		
	Case I	Case II	Case III
1. Steel plants and Coke ovens (a)	32	32	32
2. Thermal Power generation (b)	45	48	51·2
3. Transport (Railways)	13	13	13
4. Industries	20	21·8	23
5. Brick Burning	8	8	8
6. Domestic soft coke (a)	9	10	10·6
7. Export	1	1	1
8. Collieries' own consumption	4	4	4
I. Total for Energy use	132	137·8	142·8
Non-Energy use			
II. Fertiliser feedstock	3	3	3
Total coal Demand (I and II)	135	140·8	145·8

(a) in terms of raw coal

(b) Excludding middlings (5 million tonnes)

[Case I: assuming that the relative prices of fuel will continue to be the same in future and that technology shifts would follow the same trends as in the past with certain adjustments in the trends of consumption of fuel oil, to correct for the increased use of fuel oil in the early seventies due to lack of coal supplies.

Case II: assuming an intermediate levels between case I and Case II which is considered possible of achievement under most of the foreseeable set of conditions; and

Case III: assuming that the relative prices of oil products and other fuels will continue to be in the same state as in the first quarter of 1974 and that the measures indicated in the report for increasing fuel efficiency and for substituting oil products by other fuels in areas which are viable and desirable on techno-economic considerations are implemented as suggested. Case II has been referred to as the normal case while discussing policy issues relating to specific fuels but the Committees recommendations are that efforts should be made to bring the demand in line with the estimates made in Case III.]

2.44. The Committee note that the Draft Fifth Five Year Plan has tentatively projected a coal demand of 135 million tonnes by 1978-79. The Fuel Policy Committee, in their final report which was submitted in August, 1974, after taking into account inter fuel substitution possibilities, has however estimated the demand for coal between 135 million tonnes to 145.8 million tonnes in 1978-79. In the light of energy crisis, the Department has now submitted a revised programme for 145 million tonnes of coal for the Fifth Five Year Plan. The Planning Commission which had also appointed a number of Working Groups to study the feasibility of reduction of consumption of oil products and their substitution by coal, is examining the Reports of the Working Groups and the additional requirements of coal during the Fifth Five Year Plan.

2.45. The Committee recognise that Government is taking steps to reassess the demand of coal, in view of the energy crisis. They would, however, like to stress that the demand for coal of the various sectors during the Fifth Plan, should be reassessed realistically on a rational and scientific basis, keeping in view the increased requirements, as a result of the change over of the various industrial consumers from oil to coal. They have, no doubt, that under the present circumstances, the demand for various types of coal would increase considerably which has to be catered for.

2.46. The Committee further consider that planning for a basic energy source like Coal, should be for sufficiency and not for scarcity and should therefore meet fully the needs of the various industries and other consumers so as to avoid scarcity conditions which

act as a constraint to the stepping up of production. The Committee would also like the Government to devise a suitable mechanism to keep a watch over the demand for coal of the various consumers so that timely adjustments in coal production and supply could be made to meet the fluctuations in demand of these consumers.

2.47. The Committee would further urge that coal requirements for the 6th Plan should also be broadly kept in view as a long gestation period is required for completion and commissioning of coal mining projects.

2.48. The Committee note that in the forecast made by the Fuel Policy Committee the assumptions of demands of raw coal for brick kilns and soft coke for domestic consumption are 8 million tonnes for brick kilns and 9 to 10.6 million tonnes for soft coke. The Committee would urge that an examination in depth of these demands may be made to see whether these demands need to be revised upward in the context of increasing requirements of bricks for house buildings and other construction works and the extensive scope for use of soft coke, in view of oil crisis.

E. Assessment of Statewise demands for coal

2.49. The Department was asked to state the method by which Coal demands of the various States was assessed and also whether the figures of demand for coal by the various States were maintained accurately for each year to know their requirements. They have stated that for the Fourth Five Year Plan the Coal Controller had obtained from each State Government, the estimated demand for coal for the States sponsored industries and for soft coke and brick kilns. These estimates were scrutinised with reference to the best trends in consumption, the availability of coal and transport and the demand estimates were revised by the Committee on Assessment of Coal Demand. Moreover, forecasts received from the State Governments about the growth in Sectors primarily under their control and the guidelines spelt out by the Planning Commission in their Approach to the Fourth Five Year Plan were kept in view. For other sectors such as soft coke, brick burning, small scale industries etc. for which the same method could not be adopted, an average rate of growth was assumed.

2.50. For Fifth Five Year Plan, a rate of growth of 6 per cent per annum which is somewhat lower than the industrial growth envisaged in the Draft Plan was adopted for assessing the demand for coal for brick kiln and other industries.

2.51. The Department has further stated that the figures of demand for coal are not furnished by the State Governments subsequent to the decontrol of coal in 1967. The requirements of coal to be moved by rail transport under the State controlled priorities are being sent by States to the Railways. This, however, does not give a complete picture of the demand of the States.

2.52. During evidence, the Committee enquired whether the Statewise demand for coal for various consumers had been worked out in detail after nationalisation of the coal industry. The representative of the Department stated that about 80 to 85 per cent of the demand was directly assessed by the Central Government in consultation with the State Governments and the Electricity Boards. There were other sectors in which the demand could be better assessed by the States because the small scale industries were directly controlled by the Directors of industries of the various States.

2.53. The Coal requirements in respect of soft coke, brick burning coal and coal for State sponsored consumers like glass, refractories, lime foundries, engineering industries, small scale industries etc. are sponsored by the Director of Industries/Director of Civil Supplies of the different States for all the consumers located within their State. The Department has stated that a measure was contemplated to modify the present system of sponsorship and to make the State Governments responsible for assessment and consolidation of the requirement of such consumers and arrangement for equitable distribution to them after obtaining Coal against such consolidated demands. It was further stated in a note to the Committee that the Department has requested the Coal Controller to conduct in consultation with the State Governments a demand survey of the requirements of small scale industries.

2.54. In a further note to the Committee, the Department has stated that the State Governments have been addressed regarding the estimated demand for Coal of industries with which they are concerned and that replies are awaited from the State Governments.

2.55. Regarding hard coke, it was stated by the Department that control over its distribution was imposed in July 1973 and that no Statewise demand prior to this date was available. But the Committee on Assessment of Coal Demand asessed in 1971 the demand for hard coke on an all India basis. The Coal Controller stated during evidence that on the advice of the Joint Coke Allocation Committee he was also responsible for the allocation of hard coke as per the requirements of various consumers all over the country.

The proposals of the Joint Coke Allocation Committee were also sent to the Railways and distribution was programmed in consultation with them. The representative of the Ministry stated in evidence that the actual demand for hard coke was not known and a committee had been formed to find out the real demand. Most of the State Governments did not have the exact machinery to assess the demand of hard coke in their States. The witness added:—

> "State Governments are asking for the hard coke but they do not know how much they are receiving against the demand. So, in a crisis of shortage, naturally, the demand is bound to be inflated. I asked the State Governments to give us the demand and these demands worked out to nearly three times the actual availability."

2.56. It was further stated that the aim, which was to deal with one agency in the State could not be given effect to so far.

2.57. The Committee on Assessment of the Requirement of Hard Coke has given the Report in March, 1974. The Committee visited in all 91 industrial units throughout the country and held discussions with all the State Government agencies and many associations/ federations of industries in connection with this study. The Committee has concluded from their study that there is no appreciable shortage of Hard Coke in the country if it is distributed solely to the State sponsored units and centrally sponsored units. The integrated Steel Plants (which have captive coke making facilities) are presently consuming about 24.5 per cent of the total coke, and centrally sponsored industries account for consumption of 32.5 per cent of total coke. The balance 43 per cent is left over for distribution to the States. That Committee fixed quotas of Hard coke for each State keeping in view the needs of specific industries. At the level of the quotas as presently fixed by the Committee, the overall availability of hard coke to States will be 70.4 per cent of the assessed requirements. The Committee has *inter alia* remarked that the demands furnished by many of the States are either too much inflated or the information is too inadequate to arrive at any definite conclusion. Most of the States do not appear to have the proper machinery to undertake such assessment jobs and the data supplied by them are either fragmentary or not very authentic.

2.58. The Committee note that about 80 per cent to 85 per cent of the demands for coal falling in the sector of the State Governments is directly assessed by the Central Government in consultation with the State Governments and the Electricity Boards. For areas of demands such as soft coke, brick kilns and Small Scale Industries, exact

assessment of demands has not been made and a rate of growth of 6 per cent per annum has been assumed in the Fifth Five Year Plan for assessing the demands in respect of such consumers. Regarding Hard Coke, the position is no better. Most of the State Governments do not have the requisite machinery to assess precisely the demand for hard coke for units falling in the State sector with the result that the demands were inflated and unrealistic.

2.59. The Committee understand that the Coal Controller has been asked to conduct in consultation with the State Governments, demand survey of the requirements of small scale industries, brick kilns and domestic consumers and that it was contemplated to make the State Governments responsible to assess and consolidate the requirements of such consumers and also the requirements of hard coke and to arrange for equitable distribution to them. The Committee have been informed that the State Governments have been addressed in the matter and that replies are awaited from the State Governments. The Committee note with concern the leisurely progress in finalisation of this important matter. The Committee also note that a Committee which was appointed to assess the requirements of Hard Coke has fixed quotas for consumption for each State after on-the-spot discussion with all State Government agencies. The Committee feel that ad hoc fixation of quotas by a Committee of this nature is not likely to serve the purpose and that the assessment of demands should be based on a scientific system that should be devised and implemented by the State themselves. The data collected by the Committee on Hard Coke can provide useful yardsticks against over-pitching of demands.

2.60. The Committee urge that a rational and scientific procedure for assessment of demands of coal for brick kilns, small scale industries, domestic consumers and for hard coke be laid down and implemented, making the State Governments responsible for determining the actual requirements in their Sector. For this purpose it would be desirable that the necessary guidelines are laid down by the Central and a standard proforma for collection of requisite information is devised and circulated to the State Governments.

CHAPTER III

PRODUCTION OF COAL

A. Plan Targets and Achievements

The following statement indicates the targets of coal production and achievement during the various plan periods:—

Plan	Target	Production during last year of Plan
Second	60 m.tonnes	54·62 m.tonnes (1960-61)
Third	97 m.tonnes 89·90 m.tonnes (Mid-term appraisal)	67·72 m. tonnes (1965·66)
Fourth	93·5 m.tonnes	77·90 m.tonnes (1973-74)
Fifth	*135 m.tonnes	——

3.2. The following statement indicates the production of coking and non-coking coal during the Third and Fourth Plan periods (year-wise):—

(in million tonnes)

Year	Coking coal	Non-coking coal	Total
THIRD PLAN			
1961·62	16·990	38·190	55·180
1962-63	17·320	46·130	63·450
1963-64	17·497	47·630	65·127
1964-65	16·527	46·251	62·778
1965-66	16·960	50·765	67·725
PLAN HOLIDAY			
1966-67	16·582	51·978	68·560
1967-68	16·117	52·402	68·519
1968-69	17·191	54·224	71·415

*A revised production programme for 145 million tonnes submitted by the Department in the light of the energy crisis is under examination by Planning Commission.

Year	Coking coal	Non-coking coal	Total
FOURTH PLAN			
1969-70	18·000	57·615	75·615
1970-71	17·820	55·130	72·950
1971-72* . . .	(a) 16·650	55·410	72·060
1972-73*	16·560	(b) 56·950	73·530
1973-74	15·80	62·10	77·90

3.3. The Department has stated that the main reasons for the shortfall in production during 1965-66 (last year of Third Plan) were as follows:—

(a) Shortfall in the demand of important consuming-sectors like steel, thermal power stations, cement etc.

(b) Inadequate rail transport.

(c) Electrification and dieselisation progragge of the Railways, leading to reduction in their estimated demand for coal.

(d) The loss of the export market to Pakistan.

Explaining the reasons for the shortfall in production of coal during 1973-74 (last year of the Fourth Plan) the Department has stated that "it will not be possible to achieve the target of 93.5 million tonnes in 1973-74. It may be mentioned that the demand has also not reached this level. The production is expected to be about 80 m.t. during 1973-74". (actual production was 77.90 m.t.)

(a) Management of all mines except captive mines of private sector Steel Plants taken over by Govt. from 17-10-71 ; completely nationalised from 1-5-72.

(b) Management of private sector mines taken over by Government from 30-1-73, completely nationalised from 1-5-73.

*At the time of factual verification the deptt. has stated that the figures for 1971-72 and 1972-73 are as under :—

Year	Coking coal	Non-coking coal	Total
1971-72	16·71	55·71	72·42
1972-73	16·62	60·60	77·22

3.4. According to the Department the shortfall in production of coal in 1973-74, (the last year of the Fourth Five Year Plan) is due to the following reasons:—

(i) Shortfall in the demand from important consuming sectors like the steel plants.

(ii) Inadequate rail transport since the last quarter of 1970.

(iii) Frequent power breakdowns and continuing power shortage, particularly in the Eastern region.

(iv) Shortage of explosives in recent months.

(v) The unsettled law and order conditions in West Bengal during the earlier years of the Fourth Plan, which led to the closure of a large number of mines.

(vi) Inadequate investment and attention paid to sand stowing and other measures by the private mine owners.

The Department has stated that it has not been possible to quantify the shortfalls attributable to each of the reasons listed above.

3.5. Regarding capacity for coal production which existed in the coal industry the Task Force on Coal and Lignite for the Fifth Plan has observed as follows:—

"Unutilised capacity to the extent of about 18.5 m.t. over the 1971-72 production level of 71.5 m.t. exists in the coal industry so that a coal demand of upto 90 m.t. can be met without going in for new projects."

3.6. Regarding the steps taken to remove the causes of shortfall in production experienced during the Fourth Plan period, the Department has stated that all the mines except the captive mines of the private sector steel plants are now in the public sector. This fundamental change has made it possible to reorganise, reconstruct and modernise the mines to enable optimum utilisation of the available resources. Further the rail transport facilities, especially in the Bengal-Bihar coalfieds, are being rationalised to enable better and effective utilisation of such facilities. A study has also been carried out by the Railways for increasing facilities for meeting the coal traffic of the Fifth Plan. While the recommendations made as a result of this study in regard to the Bengal-Bihar coalfields are under examination, implementation of the first phase of the recommendations has already been initiated in respect of the out-

lying fields. Apart from these, various measures have been taken and would continue to be taken for improving coordination between the producers and the Railways in the day to day operation of the mines and the transport of coal.

3.7. Regarding the problem of power supply the Department has stated that the Electricity Supply undertakings have been instructed to treat the coal industry at par with the Railways in the matter of power supply. To make this priority effective, it is proposed to segregate the power supply lines meant for the coal industry. In order to get over the difficulty of recurring power breakdowns, it is also proposed to instal captive power plants of the Coal Mines Authority and the Bharat Coking Coal in the Raniganj and Jharia coal-fields in the Fifth Plan.

3.8. Regarding shortage of explosives, the Department has stated that the difficulties that are being faced by the two man explosive manufacturers in the private sector in regard to installation of standby capacity, availability of raw materials etc., are being sorted out with the assistance of the Ministry of Industrial Development. As the capacity of the existing units will be inadequate to meet the increasing demand, it is proposed to set up a slurry explosives plant in the public sector and another plant based on Nitro-glycerine under the Department of Defence production.

3.9. The Department has stated that guidelines have been laid down for regularisation of employment of workers after nationalisation and followed strictly in appointing the workers and others. In order to streamline the working conditions including the wages of the coal workers, a Joint Bipartite Negotiating Committee for the coal industry as a whole has been set up. According to the agreement between the management of the coal organisations and the representatives of the workers, the minimum wage of the colliery worker would go up from Rs. 222 to Rs. 325 per month. In addition, it is proposed to grant house rent allowance of Rs. 15 per month to all the workers who are not provided with housing by the management. As an interim relief, an amount of Rs. 39 per month per worker or Rs. 1.50 per day has been agreed to with effect from 15.11.73. The agreement for further revision is under the active consideration of the Government at the highest level.

3.10. Efforts have been made to curb the tendency of certain reported inter-union rivalries particularly through the good offices of the Labour leaders. Every attempt is being made to look into

the grievances of a large number of mine managers and other officers who in the process of streamlining were put to financial loss through reduction in pay and perquisites.

3.11. The main malpractices of not paying to the workers their due share, as per the Wage Board's recommendations, which was prevalent before nationalisation in the private sector mines have been eliminated.

3.12. Regarding production of coal during the Fifth Plan, the Department has stated that against the demand of 143 m.t. by 1978-79 as assessed by the Task Force on Coal and Lignite a target of 135 m.t. has since been fixed tentatively in the draft Fifth Five Year Plan. The overall increase to be attained in the Fifth Plan therefore works out to 55 million tonnes, which represents an increase of about 69 per cent over the anticipated production in 1973-74. The Department has stated in a further communication that a production programme for 145 million tonnes in the light of the energy crisis due to additional requirements for substitution of coal for oil in certain sectors has been submitted.

3.13. The Department has also stated that the magnitude of expansion in the production of coal to achieve the Fifth Plan target will require concerted action on the part of all concerned. The nationalisation of the coal mines makes it possible to reorganise and rationalise production and to restructure the mines in a coordinated manner. Action in this regard has already been initiated. The establishment of Bharat Coking Coal and of Coal Mines Authority with National Coal Development Corporation as a subsidiary provides the institutional structure for the coordinated management of the Coal Mines.

3.14. The Department has further stated that considerable advance action has already been taken in order to ensure that the programmes in the coal sector are fulfilled. The Mines from which the additional production would be achieved have been substantially identified and all the new mines to be developed during the Fifth Plan are in the process of demarcation. Detailed drilling work has already been completed for most of the areas. For all the other areas, this work is proposed to be completed within above a year's time. In order to expedite preparation of the detailed Project Reports, a Central Mines Planning and Design Institute with headquarters at Ranchi has been set up under the Coal Mines Authority Ltd. It will have three Regional Institutes one each at Ranchi, Dhanbad and Nagpur to be set up in two phases during the Fifth

Five Year Plan. The existing Planning and Design Cell of the National Coal Development Corporation forms the nucleus of the Central Institute at Ranchi. The Planning and Design Cell of the Bharat Coking Coal Ltd. would form the nucleus of the Regional Institute at Dhanbad. The Central Institute is carrying out the work of project planning and designing in respect of mines|mine-fields under its jurisdiction as well as those connected with standardisation, typification, coordination and integration of applied research and development of new techniques of coal mining industry, perspective planning and limited exploration work. The institute has undertaken planning and design of new mines and modernisation| reconstruction of the existing mines for the achievement of the coal production targets. The programme is for preparing 141 project reports, 52 by 1974, 55 by 1975 and 34 by 1976. So far 43 new|Revised Feasibility|Project Reports have been prepared for an ultimate production of 32.184 million tonnes of coal.

3.15. The Department has stated that the tentative year-wise estimates of production during the Fifth Plan period for coking and non-coking coal separately as formulated by the Ministry, with reference to the assessed demand of 143 million tonnes by 1978-79 are as follows:—

(figures in m.t.

Sector	1974-75	1975-76	1976-77	1977-78	1978-79
(I) COKING COAL					
(a) B.C.C.	13·00	14·00	16·00	18·00	20·30
(b) C.M.A.	5·00	6·00	7·00	8·00	8·90
Private Sector .	2·50	3·00	3·50	4·00	4·50
TOTAL— .	20·50	23·00	26·50	30·00	33·70
(II) NON-COKING COAL					
(a) B.C.C. .	5·00	5·20	4·40	5·60	5·70
(b) C.M.A. .	60·61	66·11	73·92	83·95	91·60
(c) Singareni Colliery Company	6·20	7·00	8·30	10·00	12·00
TOTAL— .	71·81	78·31	87·62	99·55	109·30
TOTAL —(I&II)	92·31	101·31	114·12	129·55	143·00
Percentage increase from year to year	—	9·7%	12·6%	13·5%	10·4%

3.16. Regarding the production programme the fieldwise distribution of coal production in 1978-79 as given in the Report of the Task Force on Coal and Lignite for the Fifth Plan is as follows:—

(in million tonnes)

Coalfield	Actual production in 1971-72	*Actual production in 1973-74	Estimated production in 1978-79	Increase in 1978-79 over 1973-74 level
(A) COKING COAL				
Bengal-Bihar	16·74	15·77	32·31	16·54
(B) BLENDABLE COAL				
Bengal-Bihar	1·46	1·50	2·10	·60
Central India Coal-fields	0·29	0·38	0·70	·32
(C) NON-COKING COAL				
1. Bengal-Bihar	31·13	35·41	53·07	17·66
2. Singrauli	1·30	1·91	7·30	5·39
3. Talcher	1·02	1·05	3·83	2·78
4. Korba	1·48	1·58	4·60	3·02
5. Central India Coal-fields	6·62	7·96	14·65	6·69
6. Pench Kanhan Tawa	3·91	3·98	7·85	3·87
7. Maharashtra	2·27	2·55	5·70	3·15
8. Singareni	4·71	5·31	10·00	4·69
9. North East Region	0·63	0·47	1·00	0·53
TOTAL	71·56	77·87	143·11	65·24

3.17. The Department has stated that a provision of Rs. 737 crores has been proposed in the Draft Fifth Five Year Plan for the Coal Programme, as detailed below:—

	Rs. Crores
1. Coal Mines Authority (*including N.C.D.C.*)	
(a) Continuing Schemes	81
(b) New Schemes	329·93
	411·86

*Figures obtained from Department of Coal.

Bharat Coking Coal		
(a) Continuing schemes . . .		77·00
(b) New Schemes . . .		97·00
		174·00
3. *Singareni Collieries Co.*		
(a) Continuing Schemes . . .		3·21
(b) New Schemes . . .		28·79
		32·00
4. Prospecting and Drilling . .		75·00
5. Sand gathering and Transport . .		30·00
6. Explosives Plant		6·05
7. Low Temperature Carbonisation Plant. .		8·00
		736·91

3.18. Besides, provision for formed coke plant and the Central Mines Planning and Design Institute also exists under the overall provision of Rs. 29 crores, under "Science and Technology Programme". The question of provision of additional funds for the captive power stations and for a second L.T.C. plant as well as for advance action for Sixth Plan Programme, has been taken up with the Planing Commission.

3.9. Regarding scope for further coal production because of oil crisis over and above the targetted production, the Secretary of the Department stated during evidence:—

> "The Department of Mines in fact had drawn up plans for a production of 143 million tonnes and when we became aware of the oil crisis we thought there should be scope for further production. When the Russian Minister of Mines was here recently we had taken him round a few places like Singrauli, Raniganj etc. with a view to exploring the possibilities of producing more coal. If some of these projects are able to give about five to six million tonnes or even seven million tonnes in the Fifth Plan or the early part of the Sixth Plan, they would contribute towards increasingly meeting the demand."

He added:—

> "But the preliminary feeling is that five to six million tonnes

may be available from the Raniganj and Singrauli Coalfields in addition to what we are already projecting. Apart from that, in the Korba area in Madhya Pradesh, there is a possibility of another four to five million tonnes. This will be in addition to what we had already projected. For this, the necessary investments will have to be provided."

3.20. The Secretary further stated that every effort was being made to reduce the gestation period. It was proposed to intensify production from existing production units instead of going in for new mines.

3.21. The representative of the Department stated that for 1974-75 a production of *90 million tonnes of coal was being planned. This would require a tremendous effort as Coal production took a long time to materialise. It was an industry which had been practically neglected all along and only after its nationalisation, it was being taken care of on proper lines.

3.22. The Department has stated that in so far as the Coal Mines Authority are concerned, their programme for opening new mines in the Fifth Plan is as follows:—

Division	Open cast Projects	Production by 1978-79 (M.T.)	Final Production (M.T.)	Under ground projects	Production by 1978-79 (M.T.)	Final Production (M.T.)
(a) Eastern	4	1·00	4·00	13	1·53	6·92
(b) Central	11	7·45	14·20	6	1·30	4·10
(c) Western	5	1·90	4·50	15	5·07	8·87
(d) Assam	—	—	—	1	0·16	·24
TOTAL :	20	10·35	22·70	35	8·06	20·13

3.23. The areas in which the new mines are expected to be developed are given at Appendix I.

3.24. The Secretary of the Department stated during evidence that most of the coal production during the Fifth Plan would be coming from the reorganisation and expansion of the existing mines. 25 per cent of production will be from the new mines.

*Since revised to 95 m.t.

3.25. The Department has further stated that in regard to the mines under the Coal Mines Authority, detailed time schedules for the preparation of feasibility reports and project reports as well as the installation of the machinery and commissioning of the new mines have been prepared in some cases. The number of mines which will be in operation during each year of the Fifth Plan period and the annual production anticipated from such mines are given on the next page.

Division/Area	No. of new mines expected to be in operation					Anticipated Production (Figures in million tonnes)				
	74-75	75-76	76-77	77-78	78-79	74-75	75-76	76-77	77-78	78-79
Assam	..	..	..	..	1	..	..	..	..	0·10
Eastern/Area I					1			..		0·10
Eastern/Area V			1	3	3			0·10	0·40	0·75
Central/Orissa				2	3		..	..	0·25	0·70
Central/Singrauli			2	3	4			0·80	1·75	3·85
Central/N. Karanpura		1	2	4	4		0·25	0·36	0·65	1·25
Central/Ramgarh		..	2	3	3		..	0·70	0·90	1·25
Central/Argada		1	3	5	6		0·20	0·95	1·50	2·35
Central/Karagali			2	3	3		..	0·35	1·00	1·10
Central/Kathara		2	2	2	3		0·22	0·50	0·60	0·90
Western/Chanda		1	3	5	5		0·10	0·36	0·70	1·20
Western/Nagpur			1	3	5			0·06	0·25	1·00
Western/Pench			2	3	3			0·12	0·25	0·45
Western/Korba		..	1	4	7			0·50	1·00	2·40
Western/Sohagpur			1	2	2			0·06	0·20	0·40
Western/Baikunthpur		..	2	5	5	..		0·24	0·75	1·15

NOTE :—Number of new mines indicated above yearwise are the cumulative figures.

3.26. Regarding coal mines under Bharat Coking Coal Ltd. block-wise detailed project report and time schedules for each activity are under preparation. No new mine will be in production during the Fifth Five Year Plan period.

3.27. Regarding the time required from the planning stage to the commissioning stage of a coal mine, the Department has stated that new underground mines have gestation period of about 7 years. A new shaft mine of about 400 metres depth of 1 million tonnes capacity takes for planning, construction and attainment of targetted production about 10 to 12 years. Open cast mines take a lesser period of about 4 to 5 years from planning to full production stage.

3.28. Normally feasibility studies are prepared and mine plans are drawn up for coal mining projects after sufficient geological data are available. By its very nature, the work of prospecting, drilling and compilation of geological data takes time. In a short period, it is proposed to initiate work on several coal mining projects and make financial investments on the basis of limited geological data only. This course of action will involve a calculated risk, which will have to be taken in the interest of increasing coal production at a fast rate. It is also expected that when the Central Mine Planning and Design Institute is fully established, standardisation and streamlining of process, may be evolved under our conditions, which may reduce the period of gestation from planning to completion of coal mines considerably.

3.29. In the discussion on Calling Attention in Lok Sabha on August 19, 1974, the Minister of Steel and Mines stated that the production target for 1974-75 was fixed at 95 million tonnes but despite vigorous efforts, the production during April-July, 1974 had been about 27 million tonnes. Judging from the *trend, production during 74-75 might reach 88 million tonnes. Among the major factors which had contributed to the lower level of production, were shortage of power in the Bengal-Bihar coalfield, non-availability and delay in the delivery of certain essential items of machinery, disturbed law and order conditions and industrial relations in eastern region and inadequacy of rail transport.

3.30. During evidence when the Committee enquired why the annual targets of production for the Fourth Plan had not been fixed, the representative of the Department stated that in the original Fourth Plan document there was no mention about the annual targets. However, in the annual plan document the production

*A statement showing trend of Coal Production during 1974-75 is atAppenp-II.

target was fixed. In this connection the representative of the Planning Commission stated that the annual plan targets for coal production were not published in the Fourth Plan document but the annual requirements for various sectors had been worked out and necessary information was available in the Ministry.

Asked whether annual targets for coal production had been indicated in the draft Fifth Plan document, the representative of the Department admitted that the Draft Fifth Plan document did not indicate the annual targets.

3.31. The Committee note that during the Second Plan period, against the target of 60 million tonnes, the actual production of coal in 1960-61 was 54.62 million tonnes. During the Third Plan, against the target of 97 million tonnes (revised during the Mid-term Appraisal to 89.9 million tonnes) the actual production amounted to only 67.72 million tonnes. Even during the Fourth Plan, the production of coal reached only 77.9 million tonnes, against the target of 93.5 million tonnes. The production of coal has thus lagged behind the targets by 5.4 million tonnes, 22.2 million tonnes and 15.6 million tonnes respectively during the last three plan periods.

3.32. The shortfall during the Third Plan has been attributed to shortfall in the demand of coal by the consuming sectors like the steel plants, thermal power stations, cement industry, Railways due to their electrification and dieselisation programme, and inadequate rail transport etc. The shortfall during the Fourth Plan is stated to be due to shortfall in the demand of important consumers like steel plants, inadequate rail transport since the last quarter of 1970, frequent power break downs and continuing power shortage in the Eastern region, shortage of explosives, unsettled law and order conditions in West Bengal during the earlier years of the Fourth Plan and inadequate investment and attention paid to sand stowing and other measures by private mine owners.

3.33. The Committee have already commented on the plea of shortfall in demand from important consumers during the Fourth Plan period in Chapter—II of their Report (Paras 2.19 to 2.25) wherein they have drawn attention to the paradox of shortfall in consumption of coal by certain sectors of industries and lack of availability of coal to the tune of about 4½ million tonnes in some other sectors. In particular, the Committee have referred to large unsatisfied demands, in the cement industry, domestic sector and brick kiln industry etc. The Committee regret that during the Fourth Plan, the

production of coal lagged behind the demand of the various consumers, by about 5 million tonnes resulting in widespread hardship to these sectors. The Committee urge that a study in depth should be made to analyse the reasons for shortfall in production so as to take effective remedial measures to prevent a recurrence of scarcity conditions in future.

3.34. The Committee note that production of coal which was 77.9 million tonnes during 1973-74 is tentatively planned to be increased to about 135 million tonnes by 1978-79. The production of coking coal is envisaged to be increased from 15.80 million tonnes in 1973-74 to 33.70 million tonnes in 1978-79 and of non-coking coal from 62.10 million tonnes in 1973-74 to 109.30 million tonnes in 1978-79. This target of coal production is likely to be revised upwards in the context of the present oil crises. The Department of Coal has already submitted a revised production programme for 145 million tonnes by 1978-79 which is under examination by the Planning Commission. Thus an increase between 57 to 67 million tonnes in the production of coal is envisaged during the period of five years.

3.35. From the tentative estimates of yearwise production during the Fifth Five Year Plan, the Committee note that the percentage of annual estimated increase in production during each year from 1974-75 to 1978-79, over the preceding year is of the order of 18.7, 9.7, 12.6, 13.5 and 10.4 respectively. The overall estimated increase in production in 1978-79, over the production in 1973-74, would be of the order of 86.4 per cent.

3.36. The Committee consider that the magnitude of increase in production of coal envisaged during the Fifth Plan is stupendous and unprecedented and would call for a well-conceived strategy of short term and long term planning, coordinated efforts and mobilisation of all resources. The Committee are conscious that this enormous increase in coal production would put severe strains on the managerial and technological capability of the coal organisations engaged in coal raising. The Committee find that there are many constraints on coal production viz. power shortage, lack of modern machinery, unsatisfactory industrial relations and endemic law and order problems in the Bengal-Bihar coal-belt. The difficulties in the availability of mechanical equipment for coal mines, power shortage and rail transport have acted as a drag on increasing coal production. The Committee would like to emphasise that unless effective action is taken urgently to remedy these shortcomings, it would not be possible to achieve the targetted production. Modern

mining methods, faster lifts and other mechanical devices would have to be employed more widely in the existing mines to increase their output.

3.37. It is also imperative that apart from other measures, both the administrative and operational machinery in the Coal Mines Authority and the Bharat Coking Coal Ltd., is geared up to face the challenging tasks ahead. Immediate measures should be initiated and organisational mechanism should be built up to ensure full and effective coordination and support from power generating agencies and the Railways as this support is vital for securing substantial increases in coal production, planned during the Fifth Plan.

3.38. Power is an essential input and should be available without any interruption. There should also be matching transport facilities which should be a little ahead of requirements. It should be therefore ensured that the development of mines is synchronised with the availability of power and transport in adequate measure to secure the raising of required quantity of coal and its movement to the consuming centres. The Committee consider that since the coal mining, power generation Coal Mining Machiery manufacturing organisations and transport organisations as well as the major consumers like steel plants thermal power stations etc. are in the public sector it would be easier to forge effective coordination among all the concerned organisations so as to develop the requisite facilities to ensure the attainment of coal production targets for each year of the Fifth Plan.

3.39. The Committee note that 75 per cent of the additional production in the Fifth Plan, is envisaged from the re-organisation and expansion of the existing mines and 25 per cent from the new mines. According to the Report of the Task Force, underutilised capacity of about 18.5 million tonnes over the 1970-71 production level of 71.5 million tonnes, existed in the coal industry and the additional demand of upto 19 million tonnes can be met without going in for new projects. The Committee further note that the total number of new mines which are proposed to be brought in production by 1978-79 will be 55, consisting of 20 opencast mines and 35 underground mines, with anticipated output of 10.3 million tonnes and 8.06 million tonnes respectively.

3.40. The Committee would like to emphasise that advance action should be taken in order to ensure that the programmes in the coal sector are fulfilled according to the time schedule. The mines from which the additional production is to be achieved should be identified and all the new mines to be developed during the Fifth Plan

should be demarcated and further action regarding drilling work etc., should be completed according to the detailed programme. The Committee would like to emphasise that development of new mines should be planned on the basis of regional requirements of coal as far as possible, so as to reduce the burden of transport on the Railways. The Committee need hardly emphasise that arrangements should be made to continuously monitor the progress in the implementation of the detailed programme so that there are no slippages and that remedial action, as necessary, can be taken without delay.

3.41. The Committee note that most of the increase in output is planned from the expansion of the existing mines. They consider that to achieve the increased targets of coal production at a quicker space, due to energy crisis, the output from the existing mines should be substantially increased by improving productivity and by implementing modernisation schemes and introducing improved methods of working.

The Committee would like to stress that effective measures should be taken to ensure production of coal, most efficiently and economically. Consumers requirements regarding quality and timely supply of coal should be fully satisfied.

3.42. The Committee note that the production target for 1974-75 was fixed at 92 million tonnes in the Draft Fifth Five Year Plan which was increased to 95 million tonnes in the context of energy crisis. Against this target the production during 1974-75 is expected to reach only 88 million tonnes i.e., a shortfall of about 7 million tonnes. The Committee are concerned to note that in the very first year of the Fifth Plan, there has been shortfall in achieving the production target fixed for the year. This, in itself, indicates that greater efforts and effective measures are required to fulfil the targets laid down for the Fifth Plan period.

3.43. The Committee note that new underground mines have gestation period of about 7 years while open cast mines take about 4 to 5 years, from planning to full production stage. The Committee would like the Central Mine Planning and Design Institute to initiate research and development activities to reduce the period of gestation of the new mines, both underground and open-cast.

3.44. The Committee further note that in the Report of the Task Force on Coal and Lignite for the Fifth Plan, the projected produc-

tion of coking and blendable coal and non-coking coal by the end of 1978-79 from the various coal-fields is as under:—

(Figures in m. tonnes)

	Bengal-Bihar Coal-fields		Outlaying coal-fields		Total	
	Estimated Production 1978-79	Increase over 1973-74	Estimated Production 1978-79	Increase over 1973-74	Estimated Production 1978-79	Increase over 1973-74
Coking and blendable Coal . .	34·41	17·14	0·70	0·32	35·11	17·46
Non-Coking Coal	53·07	19·66	54·93	30·12	108·00	49·78
TOTAL .	87·48	36·80	55·63	30·44	143·11	67·24

It would be seen that the increase in projected production of coal over 1973-74 level in the Bengal-Bihar coalfields, is of the order of 36.8 million tonnes and in Outlying coalfields, of the order of 30.44 million tonnes. The Committee recommend that a study in depth should be carried out, analysing the extent to which the projected increase in production of coal in Bengal-Bihar coalfields will affect the problem of transport logistics, considering the present inadequacy of transport in that region to meet even the current levels of supply. The Committee desire that the feasibility of maximising production in the Outlying coalfields by providing matching transport facilities so as to avoid bottlenecks in movement of this vital commodity, should be examined.

3.45. The Committee regret to note that annual targets of production of coal have not been indicated in the Draft Fifth Plan. They recommend that these targets should be laid down and published in the Plan documents to enable Parliament to keep a watch over their fulfilment. The Committee further recommend that apart from the annual targets of production from the various coalfields, the Coal Mining Organisations should also fix targets of production colliery-wise and month-wise and that a continuous watch should be kept on the attainment of these targets.

The Committee would like that the targets of production and the actual achievement should be analysed periodically to locate bottlenecks and take effective remedial steps to arrest the declining trend.

The annual targets fixed colliery-wise and the actual achievements should also be suitably published in the Annual Report of the Ministry.

B. Coking Coal

3.46. The production of coking coal during the last five years is as follows:—

(Million tonnes)

Year	Total
1969-70	18·00
1970-71	17·82
1971-72	16·71
1972-73	16·62
1973-74	15·80

3.47. The production target for 1978-79 laid down tentatively in the Fifth Five Year Plan on the basis of the tentative target of 135 million tonnes of total coal production is 32 million tonnes of coking coal and 2 million tonnes of blendable coal as against the production of 15.8 million tonnes in 1973-74. This target is likely to be revised in the light of the programme of production of 145 million tonnes submitted by the Department in the light of the oil crisis.

3.48. The development of coking coal except the captive mines of the private sector steel plants has been brought fully in the public sector. 214 coking coal mines are managed by the Bharat Coking Coal Company Ltd., a Public Sector Undertaking from 1-1-72.

3.49. The Department has stated that programmes have been drawn to increase coking coal production from the present level to the target, out of which an increase of 9 million tonnes will come from the mines managed by Bharat Coking Coal and 9 million tonnes from the mines managed by the National Coal Development Corporation.

3.50. The Department has stated that to achieve the above objective the Bharat Coking Coal Ltd. have entered into an agreement with Kopex, a Polish firm for the preparation of feasibility report for reconstruction and reorganisation of the Jharia coalfield.

3.51. A preliminary report covering list of equipment required, proposals for grouping together mining blocks, redrawal of boundaries etc. has been received from M/s. Kopex and is being examined. A second agreement with M/s. Kopex has been finalised and signed on 18th July, 1973. The main features of the agreement are preparation of project reports of the different blocks to match the programme of production targetted and technical studies, which will form the basis for the detailed technical designs and documentation covering the second phase of reconstruction and reorganisation. It also covers training of Indian Specialists in Poland.

3.52. In addition to the above, preliminaries necessary towards building up a Central Mine Planning and Design Institute have been worked out.

3.53. The Department has further stated that for more efficient control, the structure has been streamlined for smooth operation in the Bharat Coking Coal Limited. 214 Coking Coal Mines and 187 fragmented non-coking coal mines, of the erstwhile owners have been consolidated in 5 Areas having 22 Sub-areas, each under a General Manager, and Sub-Area Manager respectively. 401 colleries have been merged into 87 units. They are assisted with appropriate complement of support to cover the fields of mining, engineering, safety, accounts, personnel and development.

3.54. For improved efficiency and higher production, hydromining as well as solid blasting, with suitable type of explosives, have been adopted.

3.55. The Department further stated that 'in Jharia, where the major portion of the coking coal reserves are located, 81 per cent of the total number of collieries were producing less than 1000 tonnes per day, whereas full economies of scale can be achieved only if the units produce a minimum of 3000 to 4000 tonnes per day. Capital formation and re-investment were also inadequate to meet the needs of this industry.

3.56. Asked what steps have been taken to achieve the economies of scale in production of coking coal the Department has stated that the figures indicated (i.e. production of 3000 to 4000 tonnes per day) are the targets aimed after full implementation of the schemes of reorganisation, reconstruction and rationalisation. Necessary engineering preparations for implementation of these schemes as well as for procurement of equipment have been initiated. To achieve these targets, matching transport facilities and supply of power, and essential raw materials like explosives are also necessary. Action in

this regard has been initiated in collaboration with the concerned agencies such as the Railway Ministry and the Central Water and Power Commission.

3.57. Regarding the decline in production of coking coal after nationalisation, the Department has stated that there has been a marginal drop in output, chiefly due to inadequate and uncertain power supply, shortage of explosives, inadequate transport of coal from pitheads to consumers, unprecedented rainfall in September, 1973 and October, 1973 resulting in inundation of several mines and industrial unrest.

3.58. The representative of the Department of Steel stated during evidence that the first and foremost reason for decline in production of coking coal had been the law and order situation in the Jharia area which had a long and tragic tradition of inter-union rivalry and lawlessness coming back from the days of private sector mining. After nationalisation these factors had somehow intensified and this had affected production very adversely. The second reason was the considerable fall in the avilability of power throughout the region served by D.V.C. during 1973. During May and June, 1973, power availability connected with D.V.C. system dropped down to 400 MW on certain days out of a total load of 800 MW. Despite the fact that the D.V.C. authorities tried to do their best to meet the requirements, it was not possible to ensure a steady supply of power. This affected the production of coal in the mines and the functioning of the Washeries and on certain days even affected railway traction. After that the continued railway disruption in the Dhanbad region also had its harmful effect on the Jharia field.

3.59. The Committee note that programmes have been drawn up to increase the production of coking coal from the present level of about 16 million tonnes to about 34 million tonnes by 1978-79 which represents more than double the present output. To achieve this objective, B.C.C.L. have entered into an agreement with M/s. Kopex, a Polish firm for the preparation of a feasibility report for reconstruction and re-organisation of the Jharia coalfields. A preliminary report has been received from the firm which is being examined by B.C.C.L., and also a second agreement has been signed with M/s Kopex regarding project reports and technical studies. The Committee desire that the preparation of project reports and technical studies should be completed with expedition so that concrete measures are taken to achieve the targets projected.

3.60. The Committee note that 81 per cent of the collieries in Jharia are producing less than 1000 tonnes per day, whereas for a viable unit, the production should be a minimum of 3000 to 4000 tonnes per day. The Committee also note that for the efficient management of the coking coal mines, 214 Coking Coal Mines and 187 fragmented non-coking coal mines have been consolidated in 5 Areas, having 22 sub-areas, each under a General Manager and sub-Area Manager respectively. These 401 collieries have been merged into 87 units. The Committee also note that schemes of reorganisation, reconstruction and rationalisation of these mines are being initiated, aiming at a minimum production per unit of 3000 to 4000 tonnes per day. The Committee would urge that concerted measures should be taken to achieve the economies of scale in the production of coking coal from these coalfields so as to meet the requirements in full.

3.61. The Committee are concerned to note that there had been a certain amount of fall in the production of coking coal after nationalisation of coking coal mines. This is attributed to the deteriorating law and order situation in Jharia area, short fall in the availability of power from the D.V.C. system and continued disruption in rail traffic. The Committee need hardly stress that coking coal is the back bone of the iron and steel industry and that there should be no slackening of efforts to step up the output of coking coal. It is essential that production of coking coal is stepped up so that the production of iron and steel is not hampered in any way at any time.

3.62. The Committee desire that necessary steps should be taken to ensure uninterrupted supply of power to the coalmines in Jharia so that there is no shortfall in production on this account. It is also important that industrial relations in the coal belt are improved to avoid disruption in coal production.

3.63. The Committee further suggest that advance action should be taken for linking programmes of coke production with the production programme of the steel plants and the requisite rail facilities for transport of coking coal assured. The Committee need hardly emphasise the importance of effective coordination among the three organisations so as to ensure that the production of iron and steel does not suffer for want of availability of coal.

C. Non-Coking Coal

3.64. The following table indicates the production of non-coking

coal in the public and private sectors during the period 1969-70 to 1973-74:—

Production of Non-Coking Coal

(Production in Million Tonnes)

Year	Private Sectior	Public Sector	Total
1969-70	43·81	13·81	57·615
1970-71	40·97	14·16	55·130
1971-72	38·88	16·53	55·410
**1972-73	*39·12	17·83	56·950
1973-74	..	62·10	62·10

The target for the production of coal in 1978-79 as laid down in the Fifth Five Year Plan is 101 million tonnes. This target is likely to be revised in the light of the production programme of 145 million tonnes of total coal production submitted by the Department to the Planning Commission.

3.65. The Department has stated that out of 711 mines nationalised from 1-5-73, 527 mines have been vested in the Coal Mines Authority and the balance 184 mines of the Jharia Sector in Bharat Coking Coal Ltd. The regular working mines in Coal Mines Authority are 297. All the mines under Coal Mines Authority (including National Coal Development Corporation) except the mines in Assam have been organised into three Divisions Eastern, Central and Western and the mines in Assam constitute a separate independent sub-Area directly under the Head Office of the Coal Mines Authority at Calcutta. Eastern Division stands reorganised administratively into 86 operating units under 6 Areas, the Central Division into 56 opera-

*The production of non-coking coal in the private sector upto January, 1973 (10 months) was 32·62 million tonnes. At this rate, production for the full year works out to 39·12 million tonnes.

**At the time of factual verification the Department has stated that figures for 1972-73 are as under:

Year	Private Sector	Public Sector	Total
1972-73	40·37	20·23	60·60

ting units under 7 Areas and Assam into 3 operating units. The regrouping has been done keeping in view the principal geographical barriers, possibility of most economical exploitation of all the coal available in each unit etc.

3.66. The Committee note that the tentative target for non-coking coal in the Fifth Five Year Plan is 101 million tonnes by 1978-79 which means an increase of over 62 per cent over the present level. The Committee also note that out of 711 mines nationalised, 527 mines have been vested in the Coal Mines Authority and the balance 184 of the Jharia Sector in the Bharat Coking Coal Ltd. and that the regular working mines under Coal Mines Authority are 297. Regrouping of the mines has been done, keeping in view the principal geographical barriers, possibility of most economical exploitation of all the coal available in each unit etc.

3.67. The Committee expect that with the nationalisation of non-coking coal mines, the reorganisation and restructuring of these mines should have been greatly facilitated and should help in the achievement of objective of increased production of non-coking coal during the Fifth Plan period. The Committee in paras 3.36 to 3.43 have suggested various measures for achieving the targets of production of coal during the Fifth Five Year Plan. They hope that concerted action will be taken to implement these plans according to the time schedule laid therefor.

D. Pit-head Stocks

3.68. The production, despatches (by rail and road) and stocks of coal during the last 4-years have been as follows:—

Year	Production	Despatches of raw coal, washed coal, hard coke and soft coke		Pit-head Stocks (Raw coal)
		By Rail	By other means	
1969-70 . .	75·74	71·00	7·16	7·08
1970-71 . .	72·95	64·20	12·23	9·58
1971-72 . .	72·42	65·00	15·40	7·76
1972-73 . .	77·22	67·00	16·70	5·97
1973-74 . .	77·87	60·62	22·22	6·65
1974-75 (April-August' 74 Provisional) . .	33·78	N.A.	N.A.	5·96 (As on 31-8-74)

NOTE:—The Total despatches are more than the production as the latter includes the additional movement of washed coal and hard coke.

3.69. It has been stated that "there has been a decline of about 20 per cent in coal raisings. In 1970-71, the pit-head stock was 9.58 million tonnes or 12.55 per cent of the total production in the preceding 12 months which declined to 5.95 million tonnes in 1973-74 (upto August) or 7.3 per cent of the production. This clearly indicates that the demand for coal increased persistently over the years drawing heavily on stocks rather than on production. This is also evident from the fact that thermal power stations were fed on extra 3.82 million tonnes of coal this year."

3.70. During evidence the Committee were informed that the present stocks of coal at the pit-heads were 5.56 million tonnes and in terms of money it meant an investment of Rupees 25 crores. In fact the pit-head stocks should be very much lower as the stocks at the consuming points could only help in making coal available to the industry. If the stocks were built up at the pit-heads, it was not going to help the consumer in the event of disruption in traffic and strikes in the mines etc. As such, the matter was being considered as to whether the stocks of coal should be transferred from the mines to the consuming centres. The transfer of stocks from pit-heads to consumer points would depend upon the availability of wagons for movement of coal.

3.71. The Committee note that the pit-head stocks of coal have declined from 9.58 million tonnes in 1970-71 to 5.97 million tonnes in 1972-73. During 1973-74 the pit-head stocks are stated to be 6.65 million tones only. While appreciating the views expressed by the representative of the Department that pit-head stocks of coal should be very much lower and more coal should be transferred to the centres of consumer demand, the Committee cannot lose sight of the fact that pit-head stocks at a given time, serve as a monitor of the quantum of coal being produced in the coal mines and the rate of clearance of stock by transport. If the pit-head stocks are below norms at a particular point of time, it may mean either a decrease in production or a faster movement of coal. In the former case, immediate remedial action is called for. The Committee therefore recommend that a careful and continuous watch should be kept regarding the quantum of stocks with reference to quantity offered, wagons allotted and actual loadings. Norms should be fixed in the light of experience, to determine the quantum that should be held in stock facilitating proper grading or despatch of coal. Any fall in the stock below the norms should be properly analysed to find out whether it is due to a real improvement in the movement of coal or due to slackening of effort in the production of coal in which case, urgent action should be taken to set things right.

E. Production of soft coke and smokeless domestic fuel.

3.72. It has been stated that production of soft coke during 1972-73 and 1973-74 was 2.243 million tonnes and 2.917 million tonnes respectively.

3.73. The requirements of soft coke for all the States during the Fifth Plan period have been assessed as under:—

(Figures in Million tonnes)

1974-75	1975-76	1976-77	1977-78	1978-79
3·333	4·000	4·667	5·334	6·000

It was stated during evidence that provision was made in the Fifth Plan for both soft coke production and *LTC production amounting to 9 million tonnes.

3.74. In a note furnished to the Committee, the Department has stated that Soft Coke is predominantly produced in the Bharat Coking Coal Ltd. collieries in the Jharia field and only to a smaller extent in Coal Mines Authority collieries in the same sector. Prior to nationalisation, production of soft coke was well spread out in the Jharia fields *i.e.* in Patherdih area, Kusunda area and Katrasgarh area. After nationalisation it was found that the quality of coking coal in the Patherdih and Kusunda areas were of prime quality and this had to be conserved for the Steel Plants. Accordingly, only the inferior grades of coal were permitted to be converted into soft coke, primarily in the Katrasgarh area. As a result of this change in the pattern of production of soft coke, all the soft coke is now being offered only in the Katrasgarh depot. This area also produces coking coal to be taken to Dudga-I and Dudga-II washeries of Bharat Coking Coal Ltd. The siding facilities in Katrasgarh depot to not permit the loading of all varieties of coal simultaneously and hence there has been a shortfall in the loading of soft coke at the required level to serve all the States. The Ministries of Railways and Steel and Mines have gone into this problem and immediate steps have been taken to increase the siding facilities and much of the work is in progress. Some of the sidings had to be lengthened to load rakes and also to segregate the different types of coal so that simultaneous loading of different types of coal in larger quantities can be

*Low Temperature Carbonisation.

achieved. Most of the works will be completed in this depot by June, 1974. It will be possible then to step up the loading of soft coke to different States. The Department has stated in a further communication that the reorganisation of sidings in Katrasgarh has not yet been completed. Bharat Coking Coal Ltd. had proposed to step up production of soft coke from 1,30,000 tonnes per month to 1,60,000 tonnes per month from October, 1974 onwards. The Railways have advised Bharat Coking Coal Limited to offer the additional quantity of soft coke from Katrasgarh depot in rakes instead of wagons piecemeal.

3.75. It was stated in evidence that soft coke which was originally made from coking coal, is made out of Grade-III B Coal (non-coking coal). If the arrangements for transport could be made, Grade-III B Coal can be converted into soft coke within a week's notice. Production is not difficult. Only, it has to be moved.

3.76. The report of the Task Force on Coal and Lignite for the Fifth Plan states as follows:—

> "Soft coke production has suffered on account of transport difficulty. There is scope for more extensive use of soft coke in view of the foreign exchange difficulties in obtaining kerosene and also the desirability of reducing the consumption of fire-wood and cowdung. Conscious measures for promoting the use of soft coke are needed in the urban areas. The Fuel Policy Committee recommended that in view of the great importance of replacing the non-commercial fuels particularly wood by soft coke, the consumption of soft coke should be increased at the rate of 15 per cent per annum from 2.4 million tonnes in 71-72 to 6.3 million tonnes in 78-79 (requiring conversion of 9.5 million tonnes of raw coal). The Task Force agree in principle with the views expressed by the Fuel Policy Committee but considering the practical limitations in making available adequate transport, the demand is being placed at 5 million tonnes of soft coke equivalent to 7.5 million tonnes of raw coal. If, however, sufficient transport becomes available, vigorous efforts towards popularising soft coke further, should be taken and its production stepped up. Since there is a proposal to establish 2 LTC plants which would carbonise about 1.2 million tonnes to give about 0.7 million tonnes of coke per annum it is felt that this estimate would be more realistic for the Fifth Plan period."

3.77. The representative of the Planning Commission stated during evidence that additional production of soft coke was being provided for in the LTC plants which are really modern carbonisation plants. Hitherto soft coke has been made in a somewhat unscientific manner. So, for the first time, a decision had taken to put up two LTC plants, one in the Bengal-Bihar area and the other in the Singareni area. In the context of the need for substitution of coal for oil, a further review was being made as to whether these two plants will be adequate and whether more L.T.C. plants should be put up. In the existing plan, provision for 9 million tonnes of coal for soft coke production was made. This would be reviewed further.

3.78. The Department has stated that the Low Temperature Carbonisation process is particularly useful in cities where both gas and coke can be used. The minimum capacity of a commercial unit is estimated at 1000 tonnes per day (with reprocessing of tar) of 600 t.p.d. (without reprocessing of tar). A 1500 tonnes per day carbonisation plant in West Bengal for which feasibility report has been prepared would produce roughly 1000 tonnes of smokeless solid fuel, about 13 million cubic ft. of town gas and 120 tonnes of tar per day. The tar distillation will yield phenol, creosole and other chemicals. 1000 tonnes of coke would serve the requirements of about 2.5 lakh families or 12.5 lakhs population. Investment cost is estimated at *Rs. 12.05 crores, foreign exchange requirements will be less than 2 per cent.

3.79. The Department has further stated that Regional Research Laboratory, Hyderabad who had carried out extensive laboratory and pilot plant tests with Singareni coal, recommended the setting up of an L.T.C. Plant with a capacity of 900 tonnes per day near Ramakrishnapur Group of Mines, based on screened lumpy coal from Seam No. 2 of Ravindra Khani and Moti Khani Mines. The net produce of L.T.C. coke is estimated to be 500 tonnes per day.

3.80. The proposal to set up L.T.C. plant of 900 tonnes per day based on Singareni coal at a capital cost of Rs. 7 crores and foreign exchange component of Rs. 10 lakhs has been approved by the Central Government. The Plant is expected to be erected and commissioned in about 30 months time from the date of approval. The management of the L.T.C. Plant will vest in an independent company in which share capital is to be invested by the Singareni Collieries Company Ltd. and the Central Government in the ratio of

*At the time of factual verification the Deptt. has stated that the latest estimated cost is about Rs. 20 crores.

1.2. In view of the economic importance of the project, Singareni Collieries Co. Ltd. has been asked to incur expenditure by way of advance action for the development of the project during the current year.

3.81. A provision of Rs. 1 crore for investment in the equity capital of the new company for the L.T.C. Plant has been made in the Budget Estimates for 1974-75.

3.82. In view of the present oil crisis, the Planning Commission have set up a number of Working Groups to study the feasibility of substitution and to suggest plans of action for reducing oil consumption. The reports of the Working Groups are under examination by the Planning Commission.

3.83. The Committee were informed that there is also a plan to produce soft coke from middlings in pursuance of a recommendation from the Technical Committee on Washeries. The Technical Committee on Coal Washeries in their Report (1970-71) have stated that:—

> "Presently about 3 million tonnes of raw coking coal are used for the manufacture of soft coke for domestic consumption. Efforts should be made to manufacture the required quantity of domestic coke from middlings|sinks as may be feasible, thereby ensuring that every tonne of raw coking coal produced is used for metallurgical purpose."

3.84. The Department has stated that Bharat Coking Coal have reported that the question of utilising the middlings and sinks for the manufacture of soft coke is under examination. Experimental ovens have been built and trials are being conducted. Coal Mines Authority have reported that the middlings from their washeries which wash only medium coking coal may not have the requisite coking properties to make suitable domestic coke.

3.85. It was stated during evidence that the results of the experiment made by Bharat Coking Coal were encouraging. The construction was now being taken up in two places and it was expected that soft coke will be offered in about 4 months' time. The quantity of middlings produced in washeries under the control of Bharat Coking Coal was about 11-1|2 lakh tons. After conversion in the process of roasting or burning of raw middlings into soft coke, there will be a loss of 30 to 40 per cent. Production of soft coke will be 8 to 9 lakh tonnes per year.

3.86. The Committee note that the production of soft coke during 1972-73 was 2.2 million tonnes which rose to 2.9 million tonnes dur-

ing 1973-74. The demand for soft coke has been assessed at 3.3 million tonnes in 1974-75 and by the end of the Fifth Plan the demand for soft coke would be of the order of 6 million tonnes.

3.87. The Committee would like to draw attention to the prevailing scarcity of soft coke for domestic consumers on account of inadequate transport. The Committee have already emphasised the importance of ensuring adequate supply of soft coke to the domestic consumers, after a proper assessment of the demands of this sector.

3.88. The Committee note that manufacture of smokeless domestic fuel as a means of reducing dependence on firewood and kerosene was also being provided for in the Low Temperature Carbonisation Plants which are modern carbonisation plants. The Committee have been informed that provision has been made in the Fifth Five Year Plan for 9 million tonnes of raw coal for both soft coke production and LTC production and that the provision for LTC coke was further being reviewed in the context of the studies, made by the Working Groups of the Planning Commission regarding feasibility of substitution of coal for oil.

3.89. The Committee note that soft coke, which was originally made from coking coal is now made out of Grade-III B coal in the interests of conservation of coking coal and that the concentration of manufacture of soft coke in the Katrasgarh area, where such coal is mostly found, has resulted in transport problems. It has been claimed that if the arrangements for transport could be made, Grade-III B coal can be converted into soft coke within a week's notice. The Committee need hardly emphasise that there is an imperative need for extensive use of soft coke, in view of the present oil crisis and the desirability of conserving cowdung for use as fertiliser and also bringing about reduction in consumption of firewood. Since the production of soft coke presents no difficulties and the problem is mainly one of transport, all impediments that stand in the way of coke supplies to common man, should be removed by foresight, determination and coordinated action. The Committee therefore urge that vigorous efforts should be made to increase the production of soft coke to satisfy adequately the rising demands; and to streamline the transport arrangements by concerted efforts. The Matter is no longer one of choice but of necessity, to make available an essential fuel to the public at large.

3.90. The Committee further note that soft coke has hitherto been made in a somewhat unscientific manner and that a decision has been taken to put up two LTC plants, one in the Bengal-Bihar

area and the other in the Singareni area. The proposal to set up LTC plant of 900 tonnes per day at Singareni which will give net yield of 500 tonnes per day of LTC coke, has already been approved; the capital cost of the Project being Rs. 7 crores with a foreign exchange component of Rs. 10 lakhs. The plant is expected to be erected and commissioned in about 30 months time from the date of approval. The programme for LTC plants in the Fifth Plan is to be further reviewed in the light of the decisions taken on the basis of the studies made by the Working Groups of the Planning Commission, which are said to be under examination. The Committee also note that a 1500 tonnes per day Carbonisation plant will produce roughly 1000 tonnes of smokeless solid fuel, about 13 million cubic feet of town gas and 120 tonnes of tar per day, serving about 12.5 lakhs population. The production of LTC coke, smokeless domestic fuel with valuable by-products of town gas and tar has immense possibilities of revolutionising fuel supply in the context of the oil crisis. The Committee urge that concerted efforts should be made to implement the LTC programmes in the overall context of the demand potential, national priorities and economics of production and supply.

3.91. The Committee also note that the Bharat Coking Coal Ltd. has found it feasible to manufacture soft coke from middlings and that production plants are under way to manufacture 6 to 9 lakhs tons of soft coke per year from middlings. The Committee would watch with interest the efforts made to produce soft coke out of middlings. They presume that only those middlings which are not suitable for Thermal Power Plants would be utilised in this process.

F. Production of Hard Coke

3.92. It has been stated that production of Hard Coke during 1972-73 and 1973-74 was as follows—

(Figures in Million tonnes)

	1971-72	1972-73	1973-74
			(Provisional)
By-Product Hard Coke	0·634	0·666	0·648
Beehive Hard Coke	1·172	1·143	1·335
Pearl and Nut Coke	0·043	0·053	0·045
Coke Breeze . . .	0·036	0·049	0·029
	1·885	1·911	2·057

3.93. The demand for Hard Coke excluding Steel Plants for the Fifth Five Year Plan was 3.10 m.t.

3.94. The important industries which require hard coke are (i) foundries; (ii) Engineering industries; (iii) Calcium Carbide; (iv) Soda ash; (v) Ferro Manganese and Ferro Alloy; and (vi) Sugar Mills.

3.95. The demand as assessed by the Committee on Assessment of Demands for 1972-73 and 1973-74 was 2.16 m.t. and 2.26 m.t. respectively.

3.96. It was stated during evidence that out of the total production of hard coke of 2 lakh tonnes per month, about 40,000 tonnes per month are from the Durgapur Coke oven project of the West Bengal Government which makes premium coke, about 20,000 tonnes per month, also premium coke made in the by-product coke over plants of the Bharat Coking Coal and the balance about 1,30,000 or 1,40,000 tonnes made in the beehive ovens of Bharat Coking Coal.

3.97. It was further stated during evidence that increasing the production of Hard Coke had two difficulties. One was that coke has to be made in ovens which take time to put up. Beehive ovens could be got ready in a period of eight months to one year. But this was a wasteful method of coke making because all the valuable chemical by-products are wasted. By-product ovens enabled recovery of valuable chemical by-products like Taluene, Benzene, Tar etc., and the time taken to put up such ovens was three years. The witness stated that increase in production was being planned.

3.98. The Department has stated that the following by-products are recovered from the expelled volatile matter during coal carbonisation in by-product plants, *viz.*:—

Amatisar	. (In the form of Ammonium Sulphate/Nitrate and Urea).
Coal Tar . . .	(Recovered through fractional distillation as light oil, middle oil or carbolic oil, cressote, anthracene oil and pitch).
Crude Benzole	. Which is fractionated and refined to give Benzole, Toludle, Xyloles, solvent naptha.

3.99. The Department has also stated that several schemes for increasing Hard Coke production in the Bharat Coking Coal have been taken up such as completing the unfinished coke oven batteries and improving the working pattern of B.C.C.L. coke ovens. Production of Hard Coke has already registered an increase.

3.100. The Committee note that the production of Hard Coke during 1972-73 and 1973-74 was 1.911 m.t. and 2.057 m.t. respectively. The Committee have in an earlier Chapter referred to the absence of any data regarding the actual demands for Hard Coke and recommended remedial action to develop a rational system for assessment of demands. In the absence of correct data regarding demands, the production figures cannot convey any precise idea of the degree to which they fulfil the needs.

3.101. The Committee note that there have been persistent complaints of short supply and unsatisfied demands for Hard Coke. The Committee further note that a Committee set up in October, 1973 to assess the demand for Hard Coke of various grades for different types of industries, has estimated the total Hard Coke requirements from State sector as 5110 wagons per month. The Committee have in an earlier Chapter emphasised the need for correct assessment of demands, based on the estimates made by the Committee on Hard Coke requirements. It is very necessary that the production programme for Hard Coke is reviewed in the light of these assessments.

3.102. The Committee note that Hard Coke is mainly of two varieties, one manufactured from Beehive ovens and the other from by-product ovens. The process of manufacture from Beehive ovens, it is stated, involves waste of valuable by-products, though the ovens can be set up within a period of eight months to one year. The process of manufacturing through By-product ovens yields valuable by-products such as Toluence, Benzone, Tar etc. but it takes three years to put up such ovens. The Committee note that Bharat Coking Coal have completed the unfinished coke oven batteries and improved the working patterns of the ovens, and that production of Hard Coke has already registered an increase. The Committee hope that earnest efforts will be made to step up the production of Hard Coke to match the demand and that the valuable by-products would not be allowed to be wasted.

G. Loss in Production due to flooding

3.103. It has been stated that the Assam Coal-fields which meet the requirements of Railways in Assam are making reduced supplies available due to less production on account of flooding of mines. It is understood that steps are being taken to deflood the mines and improve production in those coal-fields.

3.104. In a note furnished to the Committee the Department has stated that the production in Assam coal-fields in January, 1974, was

37,000 tonnes, showing a steady improvement over the level of production of 25,000 tonnes in October, 1973. The production is gradually picking up and is expected to reach the normal level very soon.

3.105. The Department has further stated that flooding of mines is not an uncommon occurrence and generally the water can be pumped out with the help of the pumps installed there. In the present instance, however, there was an extraordinary in-rush of water which could not be foreseen. The capacity of the pumps installed, was not sufficient to cope with this volume of water. The matter has been looked into and preventive steps have been taken to avoid recurrence of such floodings in future. The installed capacity of the pumps is being increased to 2,000 gallons per minute in place of the earlier 600 gallons per minute capacity. In addition, more pumps of high water standage are being installed.

3.106. The Committee note that during 1973 production of coal has suffered in the Assam coalfields on account of flooding of mines. The production of coal which had fallen to 25,000 tonnes in October, 1973 has picked up to 37,000 tonnes in January, 1974. The Department has explained that flooding of mines is not an uncommon occurrence but in 1973 there was an extraordinary in-rush of water which could not be foreseen. The capacity of the pumps installed was not sufficient to cope with the volume of water. The Department has stated that the installed capacity of the pumps is being increased to 2,000 gallons per minute in place of the earlier 600 gallons per minute.

The Committee regret that the need for higher capacity pumps was not foreseen earlier. They hope that necessary action to instal pumps of higher capacity and other requisite measures will be taken without further loss of time, so that production of coal does not suffer on account of flooding of mines in future.

3.107. The Committee also recommend that the position regarding installation of higher capacity pumps may also be reviewed in respect of other coal mines which are similarly susceptible to flooding.

H. Productivity of Coal Mines

3.108. Regarding comparative productivity of coal mines in India and in foreign countries, the Department has stated that the output per man shift in the Coal Mines in India during 1973 was 0.60 tonnes. Official *O.M.S. figures for the foreign countires for the corresponding

*Output per Man-Shift.

period are not available. However, in 1970 upto which year only information is available, the O.M.S. in India and those in some of the foreign countries compare as follows:—

Name of the country	O.M.S. in tonnes	
Australia	10·86	(Provisional)
Belgium	1·60	
Canada	9·03	
Czechoslovakia	4·74	
France	1·53	(Provisional)
Holland	1·09	
India	0·67	
Japan	1·69	(Provisional)
Poland	1·54	
U.K.	2·14	
U.S.A.	17·27	
W. Germany	2·21	

3.109. The Secretary of the Department stated during evidence that productivity has been going up in India as compared to 1950 when it was .32, and that planning was being done for a fairly high O.M.S.

3.110. The Committee note that during 1970, the output per manshift in the coal mines in India was 0.67 tonnes as against 17.27 tonnes in U.S.A., 9.03 in Canada, 4.74 in Czechoslavakia, 2.14 in U.K, and 1.54 in Poland. During 1973, the output per manshift in the coal mines in India came down to 00.60 tonnes against the earlier figure of 0.67 tonne achieved in 1970. The Committee are greatly concerned to note that O.M.S. in India is very low compared to other countries and that it has further gone down in 1973 to 0.60 tonne instead of increasing upward as compared to the year 1970.

3.111. The Committee would like the Government to investigate fully the reasons for the fall in O.M.S. in 1973 as compared to 1970 and take necessary remedial measures for augmenting productivity.

I. Formed Coke Project

3.112. The Department has stated that provision exists for the formed coke project and that after consultation with Central Fuel Research Institute M|s. Chemical and Metallurgical Design Company Private Ltd. have prepared a feasibility report for the manufacture of formed coke from non-coking coal of Talcher area in Orissa, N.C.D.C. will undertake the project after Government's approval is received. The Central Mine Planning and Design Institute has prepared the Project Report.

3.113. The Committee understand that the project of manufacturing formed coke has interesting possibilities from the point of view of conservation of coking coal. They would like that the economics of the project should be carefully worked out. Taking into account the dwindling reserves of coking coal available in the country and the comparatively abundant reserves of non-coking coal, it may represent a break through of significance if found economically and technically feasible.

J. Reserves of Coal and Explanation

3.114. The Department has stated that the total gross reserves of coal in the country are estimated at about 81,000 million tonnes by the Geological Survey of India. The coking coal reserves are, however, about *11,400 million tonnes only. After allowing for losses due to the coal locked up in barriers, mining and washing, the net resources of coking coal that might be available for metallurgical purposes are estimated at about 3180 million tonnes only in the prime and medium coking varieties. By current estimates the coking coal reserves are not expected to last for more than 50 years.

3.115. In the field of non-coking coal, though the resources are available in adequate quantities much of them are poor in quality and are unevenly distributed among different regions of this country.

3.116. The Department has further stated that Bharat Coking Coal Ltd. soon after its establishment have initiated an elaborate programme towards exploration involving an aggregate drilling to the extent of 2,00,000 metres in the coal measures of the Jharia field by end of 1975-76. Geological Survey of India has taken up regional exploration beyond the proved sectors and has already deployed 9 rigs for the purpose. The detailed prospecting has been entrusted to Mineral Exploration Corporation.

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*At the time of factual verification the Department has stated that the coking coal reserves are 20, 154 million tonnes.

3.117. Over and above, Bharat Coking Coal Ltd., has done departmental exploration specially from underground workings and schemes are in hand to further intensify the task by employing more drills and cover an aggregate departmental drilling of 20,000 metres in 2 years time.

3.118. The Department has further stated that the Geological Survey of India has taken up several investigations to make a regional appraisal of non-coking coal resources. The important findings are:—

(1) In the U.P. Sector of Singrauli coalfield a total quarriable reserve of 259 million tonnes down to an overburden ratio of 1 : 3 have been estimated. Detailed drilling has already been taken up by N.C.D.C. for opening up new mines during the Fifth Plan.

(2) A total reserve of 875 million tonnes has been indicated in the virgin Chuperbhita basin of Rajmahal coalfield. Detailed drilling is being contemplated.

(3) In the North Karanpura coalfield in Hazaribagh district, seems as thick as 20-22 metres with quarriable potentiality have been located. Total gross reserves are estimated at 5,326 million tonnes.

(4) In Patherkhera Sector-III additional reserves of 34 million tonnes have been estimated.

3.119. Besides, exploratory drilling is also being carried out in Sohagpur, Bisrampur, Lakhanpur in Central India and Godavari valley where additional reserves of non-coking coal have been proved.

3.120. Detailed drilling in identified mine fields are being conducted extensively by Coal Mines Authority, Singareni Collieries Company, Bharat Coking Coal and the Mineral Exploration Corporation.

3.121. To the Committee's enquiry whether the mapping of the whole of India showing location of coal reserves was over, the Secretary of the Department stated during evidence that so far as the coal fields are concerned, a very detailed mapping has been done. Wherever the Geological Survey has been able to establish coal deposits, detailed drilling was being undertaken wherefrom they will be able to get production during the Sixth Plan. The Secretary added that it was very difficult to say what was the total deposit of coal

still unexplored but on the basis of regional drilling so far done the total reserves indicated were about 80,000 million tonnes upto a depth of 2,000 feet of all varieties of coal.

3.122. The Committee note that the gross reserves of coal in India are estimated at about 81,000 million tonnes by the Geological Survey of India, out of which the coking coal reserves account for *11,400 million tonnes. The Committee further note that the net coking coal reserves available for metallurgical purposes are estimated at 3180 million tonnes only, which are not expected to last for more than 50 years. The reserves of non-coking coal, though apparently abundant, are poor in quality and unevenly distributed among different regions of the country.

3.123. The Committee understand that there is an apprehension that the reserves of coking coal may prove to be inadequate to cater to the growing needs of a modern steel based economy. As regards non-coking coal, the apparently prolific reserves may also be found to dwindle fast with the increasing dependence on coal as fuel.

3.124. The Committee are of the view that there are immense possibilities of locating more reserves by intensive exploration and drilling with advanced techniques and methodology. Considering the prime importance of coal in the economic development of the country, the Committee need hardly stress the imperative need to intensify exploration and locate new reserves of coal. Geological exploration has to keep itself always abreast of the plans of coal production in view of the long gestation period of new mines. The Committee, therefore, recommend that a strategy of large scale mapping and proving of the coal deposits in qualitative and quantitative terms should be undertaken on an extensive scale so that development plans for the future are not disturbed by coal shortage. The Committee would also like that efforts should be made to prospect for new reserves of coal near the bulk consumers as far as possible so that new coal mines are developed in proximity to the consuming centres. This would help to rationalise movement of coal and give a fillip to the development of all parts of the country, particularly the backward areas. It is of the utmost importance that a well-coordinated programme of survey, investigation and exploratory drilling for coal deposits is formulated and implemented according to a time-bound programme, to meet the long-term needs of the steel industry and other users.

*At the time of factual verification the Department has stated that the coking coal reserves are 20,154 million tonnes.

CHAPTER IV

SUPPLY OF COAL

A. Distribution of Coal

The system of allocation and distribution of various types of coal is stated to be as under:

(A) Coking coal and blendable coal for steel plants and coke ovens.	Distribution is controlled statutorily. The Coal Controller makes monthly allocation to each steel plant, washery etc. through monthly coal allocation meetings attended by representatives of producers, major consumers and Railways. Day to day allotments and movement are arranged by the Railways within the allocations so made the offers/indents made by the collieries and the anticipated availability of wagons.
(B) Coal for export, Defence and Ordnance.	The distribution is arranged by the Coal Controller. Wagons are allotted by the Railway as recommended by them.
(C) Railways.	The programmes are sponsored by the Railways themselves in accordance with the annual loco contract and allotments are made on the basis of the same.
(D) Power Houses and Cement	The allocation is made periodically by the Standing Linkage Committee. After the Committee allocates the quantity and specifies the coalfield for individual power house or cement plant day to day allotment of wagons is made by the Railways.
(E) Centrally sponsored industries like paper, textile, jute, Heavy Chemicals, Sugar, fertilisers etc.	The coal requirements of these categories of consumers are sponsoted by various Central Government authorities specified for the purpose. For example, the Director-General Technical Development is the sponsoring authority for Paper, Heavy Chemicals, Rayon and other industries. The Textile Commissioner sponsors the coal requirements of Textile Mills, the Tea-Board for tea gardens etc. On receipt of the sponsored requirements, Director, Rail Movement makes the allotment of wagons consistent with their availability and the requirements of rationalised transport on the basis of day to day offer of coal by CMAL/BCCL.
(F) Soft Coke, brick-burning coal and coal for State sponsored consumers like glass, refractories, lime, foundries, engineering industries, small scale industries etc.	The coal requirements for these categories of consumers are sponsored by the Director of Industries/Director of Civil Supplies of the different States for all the consumers located within their States. Thereafter, the same procedure as in the case of the Centrally sponsored consumers is followed. Despatches of soft coke are generally effected to nominees of State Government/Union territories and other statutory bodies belonging to the States. Some States have nominated agencies like cooperative societies to receive the coal/coke in rakes and distribute to the individual consumers.
(G) Hard Coke	Allocation consumer-wise is done by the Joint Coke Allocation Committee under the Chairmanship

of Coal Controller and wagons are allotted by the Railways on the basis of such allocation.

The authorities concerned with demands and distribution are as follows:—

(i) Coal Controller.	Allocates coking coal and blendable coal for steel plants and coke ovens. He also heads Joint Coke Allocation Committee. Allocations for export, defence and ordnance factories are also made by the Coal Controller.
(ii) Railways.	Arranges day to day allotments of wagons and movement of coal.
(iii) Joint Coke Allocation Committee.	It is headed by Coal Controller and controls distribution of hard coke.
(iv) Standing Linkage Committee.	This Committee is functioning since February, 1973 specifically for reviewing requirements of power houses and cement factories and linking the same to particular coalfields. This Committee consists of representatives of the Ministry of Steel and Mines the coal producers, the Railways, Central Water and Power Commission, Planning Commission and the Ministry of Industrial Development.
(v) Sponsoring Authorities for Coal demands	
Railways:	for Railway requirements.
DGTD : Textile Commissioner.	for paper, Heavy Chemicals, Rayon & other industries For Textile Mills.
Tea Board	For Tea Gardens.
Director of Industries/Director of Civil Supplies of different States.	For all consumers located within their States in respect of soft coke, brick burning coal and coal for State sponsored consumers like glass, refractories, lime, foundries, engineering industries, small scale industries etc.

4.2. The distribution of coal is left to the Joint Cell consisting of the representatives of Railways, Coal Mines Authority Ltd. and Bharat Coking Coal Ltd., so that day to day watching of available coal and available transport be made and such adjustments as are necessary to be done.

4.3. It may be noted from the above that apart from coking coal and hard coke, there is no statutory control on distribution of non-coking coal but the existing procedure for sponsoring and rail movement does bring about an indirect and limited distribution of coal.

4.4. For the purposes of allotment, demand for coal is classified under three broad categories viz., A, B & C. Category A comprises the more essential industries like steel plants, washeries, power houses, railways, steamer services, Defence, Ordnance, Water works etc. Category B comprises other industries. Category C consists of

Soft Coke, Hard Coke and coal for brick-burning. Though the above three groups indicate the order of priority for allotment, distribution is attempted to be done equitably among all by fixing commodity quota. Thus a quota of 300 wagons per day for Hard Coke, 200 wagons for Soft Coke and 200 wagons for brick-burning coal per day have been fixed though these categories come under the last priority class *viz.* C.

4.5. It is noticed from the Annual Report of the Department of Mines, 1973-74 that the Standing Linkage Committee has finalised the coal linkage for all the power stations included in the Fifth Plan programme. In addition it has examined the question of conversion of power stations using furnace oil to coal. That Committee has also fixed the coal allocation of all the cement factories taking into account realistic possibilities of coal production and transportation and rational sources of coal supply for each unit.

4.6. It has been stated in a further communication that a High Level Standing Committee consisting of the Deputy Minister of Steel and Mines, Railway Board and the Coal Producing Organisations and a member of the National Council of Science and Technology (NCST) has been set up to review the arrangements for coal loading and transportation, examination of the systems of distribution of coal and making recommendations for improving the transport and distribution of coal in the short-term as well as in the long-term. The Committee held three meetings. A statement showing the important decisions of the Committee and the action taken thereon is given at Appendix II. Reference may be made in particular to the following decisions and action taken by Government regarding level of loading.

Decision	Action Taken
1. The level of loading of coal to the following categories of consumers should be stepped up as below:—	The Railways are making efforts to increase the availability of wagons for all these consumers. During the last few months, the availability of wagons has improved. In August, 1974, the loading for steel was 2196 wagons per day. Hard Coke loading averaged 258 wagons per day. Soft Coke and brick burning were however at the level of 130 wagons per day and 107 wagons per day respectively.
(a) Steel & Washeries — 2600 wagons per day.	
(b) Soft Coke — 300 wagons per day.	
(c) Brick burning — 200 wagons per day.	
(d) Small Scale Industries. — 300 wagons per day.	

4.7. As regards the role of middlemen/traders after nationalisation, the Department has stated that the Coal Mines Authority (including N.C.D.C.) have already taken a decision not to allow any commission to middlemen after expiry of the prevalent contracts. If any consumers now choose to utilise the services of middlemen, they will have to bear the service charges, themselves. It is therefore, expected that in course of time, Coal Mines Authority and at least the major consumers will build up their respective organisations to take over effectively the functions currently being discharged by the middlemen. In the case of supplies to small consumers *e.g.* small scale industries, brick burners and domestic consumers, it is difficult to visualise the total climination of middlemen/traders in the foreseeable future. In a meeting held by the Ministry in Delhi in September, 1973 with coal producers and representatives of the State Governments, it was agreed in principle that the responsibility for distribution of coal to these sectors (small scale industries, domestic consumers and bricks burners etc.) will be taken over by the State Government themselves through such agencies/agents as they deem fit. Details of this scheme are being worked out.

4.8. In a note furnished to the Committee regarding procedural changes which are proposed to be brought about to ensure proper distribution of coal, the Department has stated that:—

> "A careful study of the problems faced by the consumers of coal in the country shows that these problems arise out of inadequacy of rail transport and availability of coal on the one hand and the inadequacy of the prevalent distribution system to make equitable distribution on the face of the scarcities, on the other. As such, there is a need for streamlining the distribution system, with a transport system matching with the coal produced to guard against a lop-sided supply pattern. Currently, the requirements and supplies to loco, power houses, steel plants, cement plants, textiles, fertiliser and some of the engineering industries are more or less streamlined either through bilateral arrangement between the consumers and the producers or through the aegis of the Standing Committee set up by this Department or through sponsorship under the Central Priorities. These consumers account for over 80 per cent of the total despatches. As such, the problems of distribution are more or less confined to the small consumers mostly under State Priorities who do not enjoy

a high priority for the supply of wagons. Their requirements are met by the balance availability of coal, which fluctuates widely with the fluctuation in the actual requirements of the higher priority consumers and the fluctuation in the wagon availability and production of coal. The proposed scheme to open dumps under the control of the State Governments to cater to the needs of these consumers is expected to go a long way in ensuring comparatively more equitable and proper distribution of coal to them. Another measure contemplated is to modify the present system of sponsorship for such consumers and to make the State Governments responsible to assess and consolidate the requirements of such consumers and to arrange for equitable distribution to them after obtaining coal against such consolidated demands. The proposal in this regard is under the active consideration of this Department in consultation with the Ministry of Railways, Planning Commission, the producers and other concerned. The scheme is expected to be finalised shortly. The Coal Mines Authority on their part are contemplating opening branch offices at important consumption centres for close liaison with and technical assistance to the consumers."

4.9. It has been stated in a further communication from the Department that the State Governments have been addressed regarding the estimated demand for coal of industries with which they are concerned and that replies are awaited from the State Governments.

4.10. The Committee note that distribution of Coking Coal is under statutory control and allocation is made by the Coal Controller through monthly Coal allocation meetings attended by representatives of producers, major consumers and the Railways. Likewise, distribution of Hard Coke is under the control of a Joint Coke Allocation Committee which is headed by the Coal Controller. In the case of Soft Coke, brick-burning coal, for State sponsored consumers like glass, refractories, engineering industries, small scale industries etc. despatces are effected to nominees of State Governments/ Union Territories and other statutory bodies belonging to the States. Despatches of non-coking coal are effected against the quantities sponsored for the various consumers by respective sponsoring authorities and as per the priority allocated by the Railways.

4.11. The committee also note that currently the requirements and supplies to loco, power houses, steel plants, cement plants, textiles,

fertiliser and some of the engineering industries which account for 80 per cent of the total despatches are stated to be more or less streamlined. The problems of distribution are more or less confined to the small consumers mostly under State priorities who do not enjoy a high priority for the supply of wagons.

4.12. The Committee further note that the Coal Mines Authority has taken a decision not to allow any commission to middlemen/traders for supplying coal to the consumers. If any consumers choose to utilise the services of middlemen, they will be required to bear the service charges themselves. It is expected that the major consumers will build up on their own suitable organisations to take over effectively the functions currently being discharged by the middlemen.

4.13. The Committee note that a high Level Committee under the Chairmanship of the Deputy Minister of Mines has been set up to look into the problems relating to transportation and distribution of coal and that a number of important decisions have been taken by that Committee. The Committee would like Government to take concerted action to see that an analysis is made in depth of the transport and distribution arrangements and concrete measures taken to ensure that the mining capacity and the rail transport facilities are developed hand in hand in order to meet rationally and satisfactorily the requirements of users.

4.14. The Committee note that the following proposals/schemes are under consideration of Government to help the low priority consumers:—

(i) to modify the present system of sponsorship for such consumers and to make State Governments responsible to assess and consolidate the requirements of such consumers and to arrange for equitable distribution to them after obtaining coal against such consolidated demands;

(ii) to open dumps under the control of State Governments to cater to the needs of these consumers;

(iii) opening of branch offices by Coal Mines Authority at important consuming centres.

4.15. The Committee are concerned to note that the scheme for making the State Governments responsible for assessment and consolidation of requirements of such consumers has not been finalised inasmuch as information has yet to come from State Governments.

As regards the scheme for opening dumps, the Committee have referred to this matter in detail in the section of the Report relating to Coal dumps.

4.16. The Committee urge that the constraints in implementation of these schemes should be sorted out and effective solutions found so that these could be finalised and implemented expeditiously in the interest of assured and more equitable supply to industries and other users falling in the category of low priority consumers.

4.17. The Committee have earlier emphasised that it should be impressed on the State Governments that the assessment of requirements of coal for non-priority consumers like brick-kiln industry, small scale industries and domestic consumers should be done in a realistic manner so that the consolidated demands by the States reflect their genuine needs of coal. The quota of coal for the non-priority sector industries should be fixed for each State after carefully examining their current and future needs and the number of industrial units/consumers to be catered to by them.

4.18. The Committee would also like to point out that the classification of industries as high priority and low priority for purposes of movement of coal, however, justified, is weighted against the small consumer. Situations arise when the small consumer finds himself left out and has to face a battle of economic survival. The Committee urge that the needs of these consumers should be met adequately.

The Committee note that commodity quotas in terms of wagons per day have been fixed for Hard Coke, Soft Coke and brick-burning coke at 300.200 and 200 respectively and that the Committee under the Chairmanship of the Deputy Minister of Steel and Mines has suggested an increase of quota for Soft Coke to 300 wagons per day. They are concerned to note that the loading for Soft Coke and brick burning continues to remain at a lower level of 130 wagons per day and 107 wagons per day respectively.

4.19. The Committee need hardly stress that small scale industries and brick kilns play an important role in the overall economic development of the country and it is, therefore, of the utmost importance that their genuine requirements are met so that these industries do not run into difficulties on account of short supply of coal. The Committee consider that the satisfaction of the needs of domestic consumers, who are large in number, is of prime importance, particularly in the context of the difficulties being experienced in getting

ready supply of Kerosene oil. Concerted efforts should be made to gear up Railway transport capacity so that these consumers also receive their due share of wagons and coal. The Committee would also urge that a continuous review of the requirements of these consumers should be made to ensure that the quotas fixed and the supplies made meet their needs adequately.

B. Supply of Coal to various Sectors

4.20. The statement given below indicates the demand and supply of coal to important industries during the period 1969-70 to 1973-74 as estimated by the Committee on Assessment of Coal Demand.

(Figures in million tonnes)

Industries	1969-70		1970-71		1971-72		1972-73		1973-74	
	Demand	Supply	Demand	Supply	Demand	Supply	Demand	Supply	Demand	Supply
1. Steel Plants . . .	10·67	10·37	11·97	10·36	13·10	10·20	14·18	11·42	14·74	11·30
2. Cement . . .	3·95	3·94	5·14	3·24	5·56	3·38	5·71	3·70	6·45	3·65
3. Loco	16·20	16·62	16·00	15·56	14·90	15·84	14·20	15·28	13·40	13·92
4. Power Houses . .	12·69	12·69	15·37	14·46	17·20	16·02	20·41	18·52	23·62	17·74
5. Brick Burning . .	4·78	4·78	5·25	3·11	5·77	2·52	6·35	2·50	6·99	2·71
6. Soft Coke . . .	3·64	3·13	4·19	2·56	4·82	2·50	5·54	2·23	6·36	2·93
7. Hard Coke . . .	2·25	1·55	2·25	1·64	2·38	2·02	2·16	1·89	2·26	1·98
8. Washeries . . .	10·92	11·11	12·09	11·63	14·10	14·46	16·62	11·43	18·74	11·89
9. Export	0·50	0·35	0·55	0·46	0·60	0·40	0·60	0·55	0·62	0·62
10. Others	12·90	12·91	13·14	11·83	15·92	12·25	..	..	..	..
TOTAL . . .	78·50	77·45	85·95	74·85	94·35	78·59	85·77	67·52	93·18	66·74

NOTE :—1. Demand is as estimated in 1971. 2. Totals for 1972-73 and 1973-74 exclude "Others."

C. Coal or Seel Plants

4.21. The daily normal requirements of different kinds of coal by the Steel Plants on the basis of the targets for steel production for 1973-74 are as follows:—

(in tonnes)

Plants	Prime	Medium	Blendable	Total
Bhilai	5,800	3,500	700	10,000
Rourkela	3,600	1,800	600	6,000
TISCO	4,200	2,100	700	7,000
Bokaro	2,760	1,840	..	4,600
Durgapur	3,150	1,100	750	5,000
IISCO	2,400	1,000	600	4,000
TOTAL :—	21,910	11,340	3,350	36,600

4.22. The position regarding the demand and supply of coal to the Steel Plants during 1969-70 to 1973-74 is as follows:—

(in million tonnes)

	Demand	Supply	Shortfall
1969-70	10·67	10·37	·30
1970-71	11·97	10·36	1·61
1971-72	13.10	10.20	2.90
1972-73	14·18	11.42	2·76
1973-74	14·74	11·30	3·44
1978-79 (Estimated demand)	27·40	..	..

4.23. On the 19th February, 1974, while making a calling attention statement regarding reported coal shortage hitting steel plants both in the private and public sectors, the Minister of Steel and Mines stated as under:—

"The programme of steel production during the current financial year requires an availability of 36,600 tonnes of coking coal daily in all the steel plants taken together. To get

this quantity of coal at the steel plants about 2700 wagons of raw coal and washed coal have to be loaded daily from the Bengal-Bihar coalfields. Unfortunately, coal movement during the year did not keep pace with the requirements and on two occasions, in August, 1973 and November, 1973 sudden dislocation of railway services brought down coal stocks at steel plants to dangerously low levels. During December, 1973 the coal supplies to steel plants received a serious setback and as a result coal consumption at the steel plants had to be reduced. With the limited arrivals of coal at the steel plants, the first concern was to ensure the safety of the installations and accordingly the pushing of ovens were cut down so as to conserve the actual coal supplies in hand although this resulted in reduced production of steel and pig iron.

For the month of January, 1974 the Coal Controller drew up as usual a programme for supply of raw coal to washeries as well as washed and raw coal to steel plants in consultation with the representatives of the mining organisations, steel plants and the railways. This involved in the supply of 11.71 lakh tonnes of coking coal to the steel plants, which would have required a daily average loading of 2700 wagons. However, it was possible to maintain a daily average loading of 1933 wagons only during the month. As a result the stock of coal held in different steel plants were depleted from about 1,47,000 tonnes on 1-1-1974 to 1,15,000 tonnes as on 1-2-1974. This happened not-withstanding the pushing of a reduced number of coke ovens in the steel plants even at the cost of loss of production of steel and pig-iron."

4.24. Regarding stocks of coal held by the Steel Plants as on 18th February, 1974, the Minister of Steel and Mines stated:

"Bhilai held a little over 6-days requirement, Rourkela a little over 3-days requirements, TISCO about 6-days requirement, IISCO about 2-days requirement, Durgapur about 4-days requirement and Bokaro, at the current level of operation, about 10-days requirements.

4.25. It was further stated that the dislocation of railway movement has also resulted in the building up of large stocks of finished

steel at all the steel plants. On 1-2-1974 there was an accumulation of 3,61,000 tonnes of finished steel at all the steel plants, which should normally be about 1,50,000 tonnes.

4.26. Maintenance of adequate stocks of coal at the steel plants is dependent upon a number of factors of which the principal are the following:—

(a) maintenance of production of prime coking coal by Bharat Coking Coal Ltd., and of medium blendable coal by NCDC/CMA;

(b) adequate supply of empty railway wagons and systematic movement of the wagons from the collieries to the washeries;

(c) efficient working of the coal washeries;

(d) regular and adequate movement of washed coal by the railways from the washeries to the steel plants; and

(e) prompt and quick handling of wagons received loaded with coal in the steel plants and their speedy return to the washeries for backloading.

4.27. There is a pattern of movement on a basis of linkages between coal mines, washeries and steel plants which is operated in close consultation between the management of the coal mines, washeris, railways and the steel plants on the basis of day to day contact. A departure from this established linkage pattern takes place only in case of emergency.

4.28. From September, 1973 a Joint Monitoring Cell was established in Calcutta for the purpose of day to day contact between the collieries, washeries, railways and steel plants. It consists of representatives of C.M.A.L. and B.C.C.L. under the Chairmanship of Director, Rail Movement.

4.29. The High Level Standing Committee referred to in para 4.6 decided in August (1973) to set up a Committee under the Chairmanship of Shri G. D. Khandelwal, Ex-Chairman, Railway Board to examine *inter alia* the different methods of reducing the detention time of wagons within the Steel Plants, washeries and mines. That Committee has since submitted its Report which is being examined by the Ministry of Railways and the Department of Steel for necessary action.

4.30. The Committee are concerned to note that the supply of Coking Coal to the Steel Plants during the years 1969-70 to 1973-74 has shown a shortfall to the extent of 0.30, 1.61, 2.90, 2.76 and 3.44 million tonnes respectively. The Committee also note that the total daily requirement of coal by the steel plants is of the order of 36,600 tonnes which requires 2700 rail wagons to be loaded per day. They regret that from August 1973, coal movement did not keep pace with the requirements and on several occasions, coal stocks were depleted at the steel plants on account of the dislocation of the railway services. In January, 1974, the daily average loading was only 1933 wagons, against the actual requirement of 2700 wagons per day and consequently the stocks of coal went down from 1,47,000 tonnes (as on 1-1-74) to 1,15,000 tonnes as on 1-2-1974.

4.31. The Committee further note that the dislocation of railway movement had also resulted in the building up of large stocks of finished steel at all the steel plants. On 1-2-1974 there was an accumulation of 3,61,000 tonnes of finished steel at all the steel plants as against the normal stock of about 1,50,000 tonnes.

4.32. The Committee are distressed to note that the availability of coal to the steel plants has been badly affected during 1973 and early part of 1974 due to difficulties in the movement of traffic on the Railways. The main problem in the movement of coal is attributed to labour trouble. The Committee have dealt in detail with the problems of inadequacy of transport in the Chapter on "Movement of Coal". The Committee would like to emphasise the need for maximum vigilance in maintaining an uninterrupted supply of coal to the Steel Plants, so that the production of steel does not suffer.

4.33. The Committee note that the Khandelwal Committee set up in August, 1973 as a result of the decision taken by the High Level Committee to examine inter alia the different methods of reducing the detention time of wagons within the Steel Plants, washeries and mines, has since submitted its Report. The Committee would like to stress the need for early examination of that Report with a view to eliminate the bottlenecks coming in the way of smooth and efficient handling of traffic.

D. Coal for Cement Industry

4.34. The position regarding demand and supply of coal to cement industry from 1969-70 to 1973-74 is as follows:

(Figures in million tonnes)

Year	Demand	Supply	Shortfall
1969-70	3·95	3·94	0·01
1970-71	5·14	3·24	1·90
1971-72	5·56	3·38	2·18
1972-73	5·71	3·70	2·01
1973-74	6·45	3·65	2·80
1978-79 (Estimated Demand)	7·00	..	..

4.35. The following table indicates the Cement industry targets and achievements at the end of the last year of each Plan from the First Plan period:

(In million tonnes)

	Target		Achievement	
	Capacity	Production	Capacity	Production
First Plan (1955-56)	5·4	..	4·9	4·6
Second Plan (1960-61)	16·0	13·0	9·2	7·9
Third Plan (1965-66)	15·0	13·0	11·6	10·8
Fourth Plan (1973-74)	21·5	18·0	19·0	16·0 (estimated)
Fifth Plan	25·00	..	..	..

4.36. The above data indicates that there has been shortfall in the production of cement in each Plan period. One of the main factors leading to the shortfall in production of cement is stated to be the lack of adequate availability of coal to the cement industry.

4.37. A statement showing the shortfall in the production of cement during September to November, 1973 as estimated and fur-

nished by the Cement Industry and received through the Ministry of Industrial Development is given below:

(Figures in lakh tonnnes)

August, 1973	1·40
September, 1973	1·87
October, 1973	1·45
November, 1973	1·47
December, 1973	8·37
January, 1974	2·55
February, 1974	3·41
March, 1974	3· 5
April, 1974	3·87
May, 1974	4·64
June, 1974	2·36
July, 1974	1·28
August, 1974	0·15

4.38. Regarding short supply of coal to the Cement Industry, the representative of the Ministry of Industrial Development (Cement Controller's Organisation) stated during evidence that Cement Industry being practically in the private sector, they were not concerned with supply of coal to the Cement plants. Only in the middle of 1973 the Ministry of Industrial Development received complaints from the Cement Industry that they were getting less coal than what was needed. The Ministry of Industrial Development took up the matter with the Department of Mines who asked the former to be represented on the Standing Linkage Committee for coal. The requirement of coal of the cement industry was then assessed on an *ad hoc* basis and placed before the Standing Linkage Committee. The Linkage Committee allotted 4.45 lakh tonnes per month for the cement industry and this quantity was to be supplied from 1st September, 1973. Due to various reasons, coal supplies had been less by about one lakh tonnes per month. Consequently cement production did suffer in various parts of the country. The coal quota for cement industry was subsequently increased to 4.57 lakh tonnes per month for December, 1973 and January, 1974. After January, 1974 the Standing Linkage Committee promised to increase the supplies to 5.20 lakh tonnes of coal as demanded by the cement industry.

4.39. Asked why less coal was transported to the cement plants, the representative of the Ministry of Railways (Railway Board) stated that against the demand of 1100 wagons per day of slack coal, the actual availability was 750 wagons per day in the Raniganj area. This was on account of the fact that certain power houses were now insisting on using slack coal, although in the past they had been using middlings. The witness, however, admitted that there was a small shortfall of 40 to 50 thousand tonnes in the movement of coal from the Central India coalfields in October and November, 1973. However, there was no difficulty in the movement of coal traffic to the Southern zone.

4.40. The representative of the Ministry of Industrial Development (Cement Controller's Organisation) informed the Committee that Power shortage was also responsible for the shortage in production of cement. For example in Tamil Nadu the power supply had been reduced to the extent of 75 per cent for the cement industry in the early part of 1973.

4.41. During evidence, the representative of the Planning Commission stated that the production target for cement during the Fifth Plan was fixed at 25 million tonnes and the estimated requirement of coal was 7.2 million tonnes. Asked whether 7.2 million tonnes of coal would be sufficient to meet the demands of cement industry during the Fifth Plan period the witness stated that the requirement of coal per unit of cement production had gone down. The reasons were, first, that during the next Plan period, production of slag cement would increase and slag cement would not require as much coal as was required for the production of portland cement. Secondly, on account of technological changes many of the new cement plants would be producing cement by the dry process which was more economical and required less fuel. As such, the coal requirement of the cement industry would be proportionately less in the Fifth Plan as compared to the Fourth Plan.

4.42. The Committee note that according to the data furnished by the Department there had been shortfall in the supply of coal to the cement industry to the extent of 1.90, 2.18, 2.01 and 2.80 million tonnes respectively during the years 1970-71, 1971-72, 1972-73 and 1973-74 respectively. The Committee further note that according to the data furnished by the Cement Industry there had been heavy shortfall in the production of cement during August, 1973 to July 1974 ranging from 1.28 lakh tonnes to 4.64 lakh tonnes per month. This shortfall is attributed inter alia to short supply of coal, apart from other reasons like shortage of power. Increase

in demands for slack coal from power stations was stated to have also affected the availability of slack coal for cement industry. The representative of the Ministry of Railways admitted during evidence that shortage of wagons for the movement of coal was the main reason which had affected coal supplies to the cement factories. Against the average daily requirement of 1100 wagons, the actual availability was only 750 wagons in the Raniganj area.

4.43. The Committee regret to observe that cement production has been adversely affected due to several factors, one of them being shortage of coal supply. The scarcity of cement has further affected various developmental projects/programmes. While noting that the Standing Linkage Committee has finalised coal allocation of all the cement factories, the Committee would urge that a continuous review be made of the linkage arrangements and the coal quotas fixd for each cement factory taking into account the likely realisation of coal production in the various coalfields and the availability of transportation so that the cement industry, which is in the core sector of the economy, does not suffer constraint in production, due to shortfall in supply of coal. The Committee would also draw the attention of Government to their recommendations, contained in paras 2.34 to 2.37 and 3.71 of their Sixtieth Report on Availability and Distribution of Cement, which deal with inadequate supply of coal to cement industry and would reiterate the need for coordination among the Ministries of Industrial Development, Department of Coal and Railways to ensure adequate and timely supply of coal to the cement industry, and for vigilant follow-up measures by the Joint Monitoring Cell, the Control Room in the Ministry of Railways and the Committee of Secretaries.

4.44. The Committee are not sure whether the requirements of coal for cement industry would go down in the Fifth Plan period largely because of anticipated production of slag cement and technological changes in production of cement by the dry process which required less fuel as assumed by the Planning Commission. The Committee would like to stress that the provision of coal for cement industry should be made after fully taking into account the projected expansion in the production of cement during each year of the Fifth Plan period.

E. Coal for Railways

4.45. The position regarding Demand and Supply of Coal to Railways during the Fourth Plan Period is as follows:—

(Figures in million tonnes)

	Demand	Supply
1969-70	16·20	16·62
1970-71	16·00	15·56
1971-72	14·90	15·84
1972-73	14·20	15·28
1973-74	13·40	13·92
1978-79 (Estimated)	13·00	..

4.46. The position regarding supply of coal to the Railways has not been found to be satisfactory of late resulting in the cancellation of trains from time to time. In this connection, on the 15th November, 1973 while making a calling attention statement regarding reported cancellation of trains and consequent difficulties experienced by the people, the Deputy Minister in the Ministry of Railways had stated:—

> "Railways have been experiencing shrinking coal supplies in recent months. Steam Coal which is consumed by the Railways and several industries, has not been available in quantities sufficient to meet the demand of all consumers of steam coal. The coal stocks with the Railways were severely depleted. In order to make available to the industries their essential requirements of steam coal, the Railways have had to reduce their own coal consumption. To achieve this in a planned manner, Railways have curtailed departmental and shunting services and also undertaken temporary suspension of some short distance less intensively used passenger trains."

4.47. Again on the 25th February, 1974, while making a calling attention statement, regarding reported decision of Sourthern Railway to cancel trains due to shortage of coal, the Deputy Minister in the Ministry of Railways had stated that there was no cancellation of trains due to shortage of coal. However, the Railways had been running with low coal stocks as they had been experiencing shrinking coal supplies in the last few months.

4.48. It was further stated that it had not been possible to build up coal stocks, as intended in a planned manner, because from November, 1973 onwards there had been a spate of staff agitations on the Railways followed by the Locomen strike, in December, 1973 which severely affected the loading of coal, particularly in the Bengal and Bihar fields. Given normal conditions of working, it would be possible to build up coal stocks and to restore the services which were curtailed in November, 1973 with the specific objective of building up loco coal stocks and assisting the industries with their essential requirements of steam coal.

4.49. In reply to Starred Question No. 23 answered in Lok Sabha on the 12th November, 1974, the Minister of State in the Ministry of Railways stated that 284 pairs of passenger trains have remained cancelled due to shortage of coal during the last three months and that these trains would be reintroduced as and when loco coal stock position will improve and stabilise at a reasonable level.

4.50. The Committee note that since November, 1973, the Railways have been experiencing shortfall in coal supplies. Steam coal which was consumed by the Railways and several other industries, had not been available in sufficient quantity to meet the demand of all the consumers. Consequently the Railways reduced their own consumption of coal by curtailing some departmental and shunting services and also by suspending some short distance passenger trains. It has not been possible to build up coal stocks because from November, 1973 onwards, there had been a spate of staff agitations on the Railways, followed by the Locomen strike in December, 1973 which severely affected the loading of coal in the Bengal-Bihar coal fields.

4.51. The Committee also note that 284 pairs of passenger trains have remained cancelled due to shortage of coal even during November, 1974.

4.52. The Committee are surprised to note that the figures of demand and supply of coal to Railways furnished to them, do not indicate any shortfall in overall supplies of coal to the Railways. It is therefore paradoxical that while on the one hand the demand of coal for the Railways appears to have been met fully, there have been persistent shortfalls in availability of coal to the Railways resulting in cancellation of train services causing inconvenience to travelling public. It appears to the Committee that shortfall in coal supplies to the Railways may be partly due to the Railway's demand for coal as originally projected, being on

the low side. The Committee would urge that a thorough probe into the circumstances in which the Railways experienced shortfall in supplies of coal should be made by Government to find out whether it was due to inadequacy in forecasting of demand by Railways, production deficiencies or transport bottlenecks etc., and should devise effective remedial measures to ensure against recurrence of such situations.

4.53. The Committee further note that a spate of staff agitations on the Railways has also been responsible for the slackness in loading of coal in the Bengal-Bihar coalfields. The Committee hope that now that the Railway strike is over, the Ministry of Railways would make concerted efforts to elicit the cooperation of their employees and to enthuse the staff to pull their weight in the task of efficient running of Railway transport which is vital for the national economy.

4.54. The Committee also suggest that a re-assessment of the requirements of coal for Railways during the Fifth Five Year plan, be made in view of the oil crisis so that steps may be taken to plan the production of the requisite quantity and quality of coal for the Railways. It should also be ensured that coal supplies to the Railways are linked to particular coal fields as has been done in the case of power plants, so as to facilitate planning and ensure regular and steady supply of coal to the Railways.

F. Coal for Thermal Power Stations

4.55. The statement given below indicates the demand and actual supply of coal to power stations during the period 1969-70 to 1973-74.

(Figures in M. tonnes)

	Demand	Supply	Shortfall
1969-70	12·69	12·69	..
1970-71	15·37	14·46	0·91
1971-72	17·20	16·02	1·18
1972-73	20·41	18·52	1·89
1973-74	23·62	17·74	5·88
1978-79 (Estimated)	45.00 (excluding 6.5 m.t. of middlings)		

4.56. The following table indicates the targets and achievements of power generation during the various Plan periods:

TABLE

Power Generation—Targets and Achievements

Plan	installed generating capacity (mKW)				Percentage shortfall
	cumulative		additions		
	Target	achievement	Target	actual	
1	2	3	4	5	6
1. First Plan (1951-56)	3·60	3·40	1·30	1·10	15·4
2. Second Plan (1956-61)	6·0	5·56	3·50	2·25	35·7
3. Third Plan (1961-66)	12·69	10·17	7·04	4·52	35·8
4. three annual plans (1966-69)	15·60	14·29	5·43	4·12	24·1
5. Fourth Plan (1969-74)	23·00	18·871	9·26	4·58	50·0
6. Fifth Plan (1978-79)	35·43	—	16·55	—	—

4.57. The installed capacity for power generation at the end of the Fourth Plan and Fifth Plan is indicated below:

	As on 31-3-74				As on 31-3-79			
	Hydro	Thermal	Nuclear	Total	Hydro	Thermal	Nuclear	Total
Utilities	6964	9808	580	17352	13387	19008	1285	33680
Non Utilities	—	—	—	1524	—	—	—	1744
				18876				35424

4.58. In January, 1973, the Coalfields Linkage Committee submitted their final report regarding coal requirements of existing and approved power stations and their linkage to particular coalfields. That Committee has remarked that in the case of every

large Thermal power station, the source of coal should be identified and the transport and coal supply programme integrated with the programme of construction of power stations. Some of the other important points made by that Committee are as follows:

(a) A large number of power stations in the Northern region have been planned to use coal from Singrauli, but the development of the coalfield has, for various reasons, lagged behind the schedule of construction of the power houses. This state of affairs is likely to continue at least till 1978-79 as whatever additional production is coming up from Singrauli, will be required for the expansion of the Obra Thermal Power Station which is being planned in a very big way.

(b) In future the power stations should be designed to suit the quality of coal which could be expected to be normally available and which could be transported to the site of the power station without undue strain. In other words, if it becomes inevitable that a large thermal power station should be located in an area far away from the coalfield, it should be designed to use better grade of coal as the transport of such coal would be more economical than the transport of inferior grade coal which contains a large percentage of ash.

(c) Chandrapura power station is linked to Dugda I and II washeries. The supply of middlings is not, however, sufficient to meet the full requirements of the power stations. Raw coal is therefore being obtained from collieries in Jharia by road. Steps should be taken to improve the quality of by-products by strict quality control over the washery input until the Dugda II washery is converted to three stage.

(d) In view of the Railway building up capacity for the transport of 2 million tonnes of coal from CIC to northern India, the coal requirements of Delhi 'C', Faridabad Bhatinda power stations have been linked with the Korea-Rewa coalfield. All these power stations are designed to burn high ash coal. The Ukai power station in Gujarat which is linked to Korea-Rewa is also designed to use this grade of coal. There is at present practically no production of Grade III coal in the Korea-Rewa coalfield. The quantity of Grade II coal produced

is also of the order of about 50,000 tonnes per month only. Hence it is necessary to develop new seams containing inferior grade coal in Korea-Rewa in order to meet the requirements of all these power stations.

(e) The Technical Committee on coal washeries has suggested that all the washeries should be three stage ones so that the quality of middlings is tolerably good. This Committee agrees with these views and suggests that this should be implemented expeditiously. The price of middlings should be so fixed that it makes allowances not only for the lower calorific value but also the abrasive content of the middlings.

(f) Special efforts are needed for the development of Singrauli Coalfields where 4 new mines including the 3 million tonnes project of Singrauli 'I' have to be started and completed.

(g) Large increase in production over the present level have to be effected in Central India coalfields, Maharashtra and Singareni. There is definite scope for increasing the production in these coalfields.

(h) The Railways should develop sufficient transport capacity in the outlaying coalfields including Singareni so that there are no bottlenecks of any kind. In an emergency it should be possible for the railway system to provide for limited additional rail movement of coal from the same or alternative sources when thermal power stations are affected by unforeseen circumstances such as outage of Tarapore Atomic Power Station, low reservoir capacity in hydel power stations and are required to run at a high load factor with increased coal consumption and some of the oil fired units are required to run on coal due to short supply of oil.

(i) The Power stations located near the coast in Southern and Western India may try taking coal by rail-cum-sea route from Bengal-Bihar particularly after Haldia port is commissioned, with its modern coal handling facilities.

(j) The Coals in India even fro mthe same coalfields vary in their composition and characteristics from seam to seam. It is felt that the boilers in future should be designed with adequate flexibility so that they can burn coals

within certain tolerance limits of calorific value, ash and moisture content and ash fusion temperature.

4.59. A Standing Linkage Committee is also functioning from February, 1973 specifically for reviewing requirements of power houses and cement factories and linking the same to particular coalfields. This Committee is stated to have finalised the coal linkages for all the power stations included in the Fifth Plan programme.

4.60. Regarding supply of coal to the Power Stations, the representatives of the Ministry of Irrigation and Power stated during evidence:

"During the last one year, we were having a lot of difficulties in obtaining the coal requirements of the individual power stations. However, except for some very few stations which had trouble in getting the required coal either because of the movement or the supply, we had no occasion to close down any major power station for any period for lack of coal. But I must, however, mention that we do run our power stations on hand to mouth basis in respect of coal. You would be surprised to know that in many power stations, we have stocks lasting only one day or two days. Very often few stations have got stocks of coal which will last for 10 days. Nowhere else in the world are the power stations required to operate on this basis."

4.61. The witness further stated:

"Since about a year, we have established a Control Room with the help of the Railway Board and the Department of Mines. The job of this Control Room is to review the every day coal stock position of all the major power stations in the country. Railways and the Department of Mines have been helping us to rush coal wherever we find that shortages exist. In spite of this, the actual supply position is very unsatisfactory and the power stations are put to a lot of inconvenience and a sense of insecurity in this regard. Unless we have at least about 8 weeks stock, we do not consider the position satisfactory. With only one or two days stock of coal, one could very well imagine the plight of the power stations, should there be any dislocation in the supply arrangement due to

some strike or some other reason. Today, we are meeting the coal requirements of the power stations on what we call fire-fighting basis by rushing coal here and there just to meet the immediate or day to day requirements."

4.62. It was further stated during evidence that the Standing Linkage Committee makes quarterly allotment of coal for each of the power stations, identify the collieries from which supplies are to be made and ensure that these supplies are maintained. In any case, the question of adequate production of coal by the Mines and the movement of this coal promptly to the power stations still remains. To some extent this part of the job is looked after by the Control Room which has been set up in the Railway Board for monitoring day to day coal supplies to the thermal stations.

4.63. A statement furnished by the Ministry of Irrigation and Power showing the Thermal Power Stations in which generation of electricity has been reduced and those which have remained unaffected due to shortage of coal is given in Appendix III.

4.64. The analysis showing units which worked normally and units which were affected is given below:

	Units which remained unaffected
	No. of Units
1. West Bengal	8
2. Bihar	6
3. Orissa	1
4. Andhra Pradesh	4
5. Madhya Pradesh	5
6. Delhi	4
7. U.P.	14
8. Haryana	1
9. Punjab	1
10. Gujarat	3
11. Rajasthan	1
12. Maharashtra	2

Units which were facing shortage of coal or have reduced generation of electricity due to shortage of coal.

1. Punjab	1
2. Haryana	1
3. Tamil Nadu	2
4. Uttar Pradesh	3
5. Ahmedabad	4
6. Rajasthan	4
7. Maharashtra	5

4.65. Some important features of the drop in generation of power in the affected units are:

1. Depletion of coal stocks owing to inadequate supply of coal.
2. Some power stations had to be closed or partially closed due to nil stocks of coal or dangerously low levels of stock.
3. Resort to consumption of fuel oil to maintain normal power generation.
4. Resort to load shedding.

4.66. The Committe regret to note that supply of coal to the Thermal Power stations during 1970-71, 1971-72, 1972-73 and 1973-74 had been very erratic. The shortfalls in supplies are of the order of 0.91, 1.18, 1.89 and 5.88 million tonnes respectively during the period 1970-71 to 1973-74. Very few power stations had enough stocks of coal which would last even for 10 or 15 days. The power stations had to face great anxiety in the absence of sufficient quantities of coal which had to be rushed to the needy Power stations to meet their day to day requirements. According to the representative of the Ministry of Irrigation and Power, the Power stations have been operating on hand to mouth basis. From the data furnished by the Ministry of Irrigation and Power, the Committee note that as many as 20 Power stations in the country were affected due to shortage of coal during 1972 and 1973 in various States and had reduced generation of electricity. The data indicates that for want of adequate supplies of coal in time, these Power stations had occasionally either to close down or to work far below their maximum capacity. The Committee also note that the unsatisfactory quality of middlings supplied to the Power stations has

also contributed to additional demands from power stations for raw coal which has produced a strain in coal supplies to other consumers. The Committee are greatly concerned at the loss in power generation due to non-availability of coal as it has adversely affected not only industrial production but also production of foodgrains in the country which is very vital for the economy.

4.67. The Committee further note that some Power stations for example at Ennore (Tamil Nadu) Basin Bridge (Tamil Nadu) and Trombay (Maharashtra) are being fed with coal as well as oil. In view of the enormous rise in the cost of oil in recent times, it is imperative that the use of oil in Power stations is reduced or completely eliminated. The Committee note that the Reports of the Working Groups of the Planning Commission regarding Primary fuel substitution and Secondary fuel substitution in power house boilers are under examination by the Planning Commission. The Working Groups have found conversion to coal firing technically feasible with some modifications to certain equipment and additional plant and equipment. The Committee would point out that any such scheme of conversion would succeed only if provision of coal of the required quality and quantity is ensured. The Committee recommend that the additional requirements of coal of these power stations which have to be converted from fuel oil consumption to coal firing should be worked out and implemented, at the earliest.

4.68. The Committee note that the largest consuming sector for non-coking coal is thermal power generation. The coal consumption by thermal stations as tentatively estimated in the draft Fifth Five Year Plan is 45 million tonnes (excluding 6.5 million tonnes of middlings), which is more than double the requirements at the end of the Fourth Plan. This estimate is subject to revision in the light of the oil crisis. The magnitude of the estimated increase in coal consumption by power stations is tremendous and demands concerted measures for simultaneously developing adequate production and transport capacity with liner programming for effecting supplies speedily and economically supported by monitoring and evaluation devices.

4.69. The Committee note that the Coalfields Linkage Committee, 1973 have studied the problem of coal requirements of existing and approved power stations and their linkage to particular coalfields. The Standing Linkage Committee is stated to have finalised the coal linkages for all the power stations included in the Fifth Plan programme. In addition, a Control Room is functioning in the Railway Board for monitoring day to day coal supplies to the thermal stations. The Committee recommend that coordinated efforts for making optimum use of the available resources in production and trans-

port should be made vigorously and concrete measures taken to ensure that power generation, which is so vital for the economy of the country, is not hampered and that assured supplies of coal are made available regularly and in time to enable the power houses to function with adequate margin of stocks and not on 'fire-fighting basis' as at present.

4.70. The Committee also recommend that the loading and unloading arrangements for coal at each end should be reviewed with a veiw to facilitate quick deployment of available wagons. Moreover, optimal stock levels for each plant should be worked out with reference to the source of coal supply, its distance from the power plant, reliability of the rail link, the seasonal variations in these factors etc. The Committee would also invite particular attention to their earlier recommendation that coal production plans and requirements of big consumers should be synchronised. This recommendation is particularly significant in the case of Power stations whose requirements are fairly well established and would therefore facilitate drawing up of meaningful plans for thermal power generation in a coordinated manner with the development of coal production side by side with the augmenting of the necessary transport facilities.

4.71. The Committee need hardly stress that it is of the utmost importance to develop the outlying coalfields to feed the Thermal power stations so as to avoid strain on transport as also long distance haulage of coal to meet the needs of the Power stations.

4.72. As regards the unsuitability of the Middlings supplied to the Power plants, which has resulted in more demand for raw coal, the Committee have referred to this aspect later in the relevant section of the Report. This is a matter which should exercise the attention of the authorities concerned to ensure that the inputs for the functioning of the thermal Power plants satisfy the basic criteria of quality.

4.73. It must also be ensured that the boilers of new Thermal Stations are so designed that they can use coal of different grades available from neighbouring coalfields. For the existing Power stations efforts should be made to introduce such modifications in the boilers as would enable them to utilise coal of a quality/grade which is available from the coalfields to which they have been linked.

4.74. The Committtee would like that coal requirements of each Power Station should be worked out carefully not only for the Fifth Plan but even for the Sixth Plan period so that long term planning for production and movement of coal to thermal power stations is done in time. The Committee have no loubt that in

future big thermal power stations would be located near the coal-fields, as far as possible, to avoid haulage of coal over big distances and consequential strain on transport system.

G. Coal for Brick-kiln Industry

4.75. The figures of demand and supply of coal to Brick Kiln industry are as follows:—

(Figures in million tonnes)

Year	Demand	Supply	Short-fall
1969—70	4·78	4·78	—
1970—71	5·25	3·11	2·14
1971—72	5·77	2·52	3·25
1972—73	6·35	2·50	3·85
1973—74	6·99	2·71	4·28
1978—79	7·50	—	—

(Estimated)

4.76. As stated earlier, the coal requirements for this category of consumer are sponsored by the Director of Industries/Director of Supplies of the State in which it is located. For purposes of allotment of wagons, the demand from this sector is classified under category 'C'. A quota of 200 wagons per day has since been fixed. A scheme to modify the present system of sponsorship for such consumers has been referred to in para 4, 8 of this Report.

4.77. The Department has stated that the reason for the short supplies of coal to the Brick kiln industry was the non-availability of wagons. It enjoys a lower priority in the allotment of wagons. Within the overall availability of wagons which has not improved for the past three years, the increased requirements of the higher priority consumer like Steel Plants, Railways, Thermal Power Stations. Cement Industry etc., have to be met, leaving only a fewer number of wagons for the other consumers including brick kilns.

4.78. From the action taken on the decision of the High Level Standing Committee (*vide* Appendix II) it will be seen that the loading for brick burning coal has averaged 107 wagons per day.

4.79. As bricks are the basic material for construction of buildings for industries and houses etc., the Committee enquired during evidence whether any higher priority for allotment of wagons was contemplated for brick kiln industry during the Fifth Plan period. The representative of the Department stated:

"The brick kiln and small scale industries are what are called low-priority industries. But, those consumers who are in the higher priority have been able to get their requirements by and large. This is precisely the reason why we are now trying to work out a new policy of distribution in consultation with the States and I hope that policy will be able to take care of the needs of the low priority sector to a much greater extent."

4.80. The Committee regret to note that during the years 1970-71, 1971-72, 1972-73 and 1973-74 there have been shortfalls in the supply of coal to the Brick Kiln industry, of the order of 2.14 m.t., 3.25 m.t., 3.85 m.t., and 4.28 m.t., respectively. The Committee note that in the system of distribution this industry falls in the category of low priority consumers for whom wagons are allotted after the requirements of the higher priority consumers are met. The Committee are concerned to note that although a quota of 200 wagons per day, has been fixed for this industry, the actual average achieved so far is 107 wagons per day i.e. about 53.5 per cent. The Committee need hardly stress that both the coal producing and transport organisations which are in the public sector, should make coordinated efforts to meet the requirements of coal of Brick Kiln industry and should draw up an integrated long-term plan for the purpose.

4.81. The Committee has strongly urged earlier that a scheme of equitable distribution of coal to the low priority industries should be devised and implemented without delay in order to assist these industries to make useful contribution to the economic development of the country. The Committee trust that with the implementation of such a scheme the Brick Kiln industry will be able to meet the increasing demand for bricks by various consuming sectors.

H. Supply of Soft Coke

4.82. The position regarding Demand and Supply of Soft Coke is as follows:—

(Figures in million tonnes)

Year	Demand	Supply	Shortfall
1969—70	3·64	3·13	0.51
1970—71	4·19	2·56	1·63
1971—72	4·82	2·50	2·32
1972—73	5·54	2·23	3·31
1973—74	6·36	2·93	3.43
1978—79 (Estimated)	6.36	..	..

4.83. As stated earlier, the requirements in respect of Soft Coke are sponsored by the Director of Industries|Director of Civil Supplies of the different States for the consumers located within their State. Despatches are generally effected to nominees of State Governments|Union Territories and other statutory bodies belonging to the States. Some states have nominated agencies like cooperative societies to receive the coal|coke in rakes and distribute the same to the individual consumers. For purposes of allotment of wagons, the demand is classified under category 'C'. A quota of 200 wagons per day has since been fixed. The Committee under the Chairmanship of Deputy Minister, Steel and Mines has suggested an increase of the quota to 300 wagons per day (*vide* Appendix II).

4.84. In a further communication, the Department has stated that the figures of allotment of wagons for Soft Coke during February, 1974 to August, 1974 are as follows:—

Month	Allotment (in 4 wheeler wagons)
February, 1974	107
March, 1974	120
April, 1974	102
May, 1974	86
June, 1974	—
July, 1974	108
August, 1974	130

4.85. A scheme to modify the present system of sponsorship of such consumers has been referred to in para 4.8 of this Report.

4.86. Asked about the shortfalls in the supply of Soft Coke, the Secretary of the Department stated that transport difficulty was the main factor which contributed to the short supply of Soft Coke. The facility available for rake loading was not sufficient. The only solution lay in increasing the number of wagons for the movement of Soft Coke.

4.87. As already stated in para 2.16, it was admitted during evidence that there was shortage of Soft Coke for domestic consumption. The shortage in the domestic sector was bound to increase owing to the oil crisis and difficulty about supply of Kerosene. As such there was need for feeding this sector with larger quantities of domestic coke so that dependence on kerosene could go down. This was one of the areas where foreign exchange could be saved. Asked how the

gap was being filled, the Secretary of the Department stated that soft coke could be manufactured in 4 days. The difficulty was about its movement. About 250 wagons per day would be needed additionally to cater to the needs of the large number of small consumers.

4.88. As already stated in para 3.74 Soft Coke is now made out of Grade-IIIB Coal. Formerly it was more profitable to make Hard and Soft Coke from better quality coking coal to the deprivation of the steel industry. Now the inferior type of coal was used. This shift has upset the pattern of movement. The inferior grades of coal were permitted to be converted into Soft Coke primarily in the Katrasgarh area. Consequently, all the Soft Coke is being offered only in the Katrasgarh Depot, where non-coking coals and coking coals to Dugda-I and Dugda-II washeries are also offered. The siding facilities in Katrasgarh depot do not permit the loading of all varieties of coal simultaneously. Immediate steps have been taken to increase the siding facilities and much of the work is in progress. Most of these works were expected to be completed by June, 1974. It will be possible then to step up the loading of Soft Coke to different States.

4.89. The reorganisation of sidings in Katrasgarh as pointed out in para 3.74 has not yet been completed. Of the 11 sidings proposed, work at 9 has been completed. Progress of work at the remaining two places was about 78 per cent and expected to be completed by the end of November, 1974. Bharat Coking Coal Ltd. has proposed to step up production of Soft Coke from 1,30,000 tonnes per month to 1,60,000 tonnes per month from October, 1974 onwards. The Railways have advised Bharat Coking Coal Ltd. to offer the additional quantity of Soft Coke from Katrasgarh Depot in rakes instead of wagons piecemeal.

4.90. In reply to a question whether Government have prepared any plan to popularise the use of Soft Coke for domestic use by rural population in the country so as to save the cowdung for its utilisation as manure, the Department has stated as under:—

> "Earlier, the State Governments were to take measures to popularise the use of Soft Coke in rural areas so as to save burning of cow dung which has a better use as manure. Not much progress has been possible in this direction because of the fact that the rural population obtained the cow dung free of cost and it has not been possible to make available any substantially increased quantity of Soft Coke so far. However, Government is conscious of the need to

popularise the use of Soft Coke and if transport becomes available, schemes in this regard can be actively considered. The Fuel Policy Committee had recommended that schemes like 'Gobar Gas' scheme of the Khadi and Village Industries Commission which envisages the production of both fuel gas and manure from the same cattle dung, should be encouraged and given greater financial support. The recommendation is also engaging the attention of Government."

4.91. Regarding the details of the Gobar Gas Scheme and the steps taken to implement it, the Department has furnished a note which is placed at Appendix IV. The salient features of the scheme are:

(1) The programme is being undertaken by the Ministry of Agriculture.

(2) It is proposed to instal 1 lakh Gobar Gas Plants during the Fifth Plan period of which 20,000 plants are programmed for 1974-75. A subsidy of 25 per cent is being proposed for the first 20,000 plants. The nationalised Banks have agreed to finance the farmers for setting up of these plants.

4.92. The Committee have already commented on the system of assessment of demand and distribution in respect of low priority consumers of which domestic consumers of Soft Coke form an important part. The Committee need hardly emphasise the imperative need for a scientific and rational system of assessment of demands and a scheme of rational and equitable distribution. They feel that unless the demand of domestic consumers are correctly ascertained and necessary production, transport and distribution arranged and streamlined, scarcity conditions for this commodity which has assumed importance in view of the oil crisis, would continue to prevail, causing hardship to the vast number of domestic consumers.

4.93. The Committee are concerned to note that there is an enormous gap between demand and supply of Soft Coke in most of the States as evidenced by the shortfall to the extent of 1.63 m.t., 2.32 m.t., 3.31 m.t. and 3.43 m.t; during 1970-71, 1971-72, 1972-73 and 1973-74 respectively. The Committee note that this gap is mainly attributable to difficulty in movement as production of Soft Coke is stated to present no difficulties since Grade IIIB coal can be converted into Soft Coke within 4 days.

4.94. The Committee have earlier in para 3.89 of this Report referred to the change in the method of manufacture of Soft Coke from better quality Coking Coal to inferior grade coal which is mainly concentrated in Katrasgarh and the problem which has arisen in transport logistics, as the siding facilities at Katrasgarh do not permit the loading of all varieties of coal simultaneously. The Committee regret to note that out of the eleven siding facilities at Katrasgarh which were expected to be completed by June, 1974, two are still incomplete. The Committee urge that all the sidings should be completed and commissioned expeditiously and movement of Soft Coke from the Katrasgarh depot should be undertaken on a large scale to ease the situation regarding short supply of Soft Coke to the consumers.

4.95. The Committee note that the quota of 200 wagons per day which was fixed for movement of Soft Coke, has been recommended to be increased to 300 wagons per day by the Committee set up under the Chairmanship of the Deputy Minister of Mines. They regret to observe that the number of wagons allotted from February, 1974 to August, 1974 is in the region of 86 to 130 wagons only. The Committee see no reason why the Railways, with their vast fleet of wagons, cannot make the requisite number of wagons available for the transport of Soft Coke. They trust that with the commissioning of additional sidings, the Railways would increase the availability of wagons for the movement of Soft Coke to at least 300 wagons per day so as to meet the requirements of the domestic consumers adequately.

4.96. The Committee have referred earlier in the Chapter on "Production" to plans for the production of Coke from Low Temperature Carbonisation Plants and conversion of middlings into Soft Coke. The Committee have also referred to the need for making provision for increased demand for Soft Coke during the Fifth Five Year Plan over and above the quantity as tentatively targetted. The oil crisis has highlighted the difficulty in meeting fully the demand of kerosene oil and has underlined the importance of Soft Coke as the main domestic fuel for the majority of domestic consumers. It is, therefore, imperative that production and availability of Soft Coke is maximised to meet the increasing demand for Soft Coke.

4.97. The Committee would like that the possibilities of manufacturing Soft Coke from the coal obtained at the outlying coalfields should also be explored in the interest of avoiding transport congestion and long haulage.

4.98. The Committee note that no progress has been made by the State Governments to popularise the use of Soft Coke so as to conserve cow dung which is a valuable organic manure for the crops. They realise that the rural population are used to burning cow dung as a fuel which is available to them free of cost but they have no doubt that with proper guidance and easy and assured availability of alternative domestic fuel, like Soft Coke at reasonable prices, the rural population could be induced to utilise cow dung far a better purpose. The main thrust should, therefore, be to ensure availability of Soft Coke in adequate measure and at a reasonable price and then to undertake vigorous steps for popularisation of its use as domestic fuel so as to avoid scarcity conditions regarding supplies of fuel to the rural population.

4.99. The Committee note that the Gobar Gas Scheme of the Khadi and Village Industries Commission which envisages the production of both fuel gas and manure from cow dung, is being undertaken on a large scale by the Government during the Fifth Plan period. The Committee recommend that a close watch on the implementation of this Scheme which has immense potentialities to provide fuel and fertiliser to the rural population, should be kept.

J. Supply of Soft Coke to Delhi

4.100. According to the reply given to Unstarred Question No. 273 dated the 21st February, 1974, the supply of coal/coke to the Union Territory of Delhi from August, 1973 to January, 1974 was as under:

(Figure in wagons)

	Soft Coke	Hard Coke	Steam Coal	Slack Coal
August, 1973	919	93	270	150
September, 1973	1307	176	Nil	525
October, 1973	922	90	54	525
November, 1973	1310	118 1/2	261	75
December, 1973	960	17	234	—
January, 1974	1317	291	243	—

4.101. During evidence when the Committee enquired the reasons for non-availability of Soft Coke for domestic consumers in Delhi, the representative of the Department of Steel stated that Bharat

Coking Coal Ltd. made a programme for despatch of Soft Coke every month in consultation with the Railways and brought Soft Coke into the Union Territory of Delhi in its own name. The rakes were then handed over to the Delhi wholesale Consumer Cooperative Society and unloaded under the supervision of Delhi Administration who earmarked the coal for various dealers. During 1973, the programme was to supply 30,000 tonnes of coal to Delhi but the actual arrivals which materialised, came to about 20,000 tonnes. So far as internal distribution within Delhi was concerned that was entirely in the hands of the Delhi Administration.

4.102. The representative of Bharat Coking Coal Ltd. informed the Committee that the supply of Soft Coke to Delhi had been much better as compared to other States which had received only 30 per cent of their total requirements.

4.103. The Committee were informed during evidence that the monthly quota of Soft Coke for Delhi worked out to 1200 wagons during summer months and 1500 wagons during the winter months. As against this, the actual supplies were as under:

Month	Wagons
August, 1973	919
September, 1973	1307
October, 1973	922
November, 1973	1310
December, 1973	960

4.104. It was further stated that the shortfall in supplies of Soft Coke to Delhi had been primarily on account of strikes and disturbances in the Railways. The position in respect of subsequent months as intimated later by the Department is as follows:

Month	Wagons
January, 1974	1317
February, 1974	1690
March, 1974	1018
April, 1974	841
May, 1	1178
June, 1974	1101
July, 1974	898
August, 1974	867
September, 1974	1198

4.105. The Committee note that during 1973, supply of 30,000 tonnes of Soft Coke was programmed for the Union Territory of Delhi. But the actual supplies which materialised were only about 20,000 tonnes. The Committee further note that Bharat Coking Coal Ltd. made the programme for despatch of Soft Coke to Delhi every month in consultation with the Railways. The Soft Coke on arrival in Delhi was received by an agency of the Delhi Administration namely the Delhi Wholesale Consumers Cooperative Society. This agency was responsible for distribution of coal to the consumers, through various Soft Coke dealers.

4.106. The Committee regret to note that the supply of Soft Coke to Delhi has been erratic and far below the requirements though it is said to compare favourably with supplies to other States who do not appear to have received even 30 per cent of their total requirements. From the figures of supplies furnished for January, 1974 and subsequent months, the position appears to have somewhat improved. Even so, it cannot be said to be actually satisfactory as barring one month, the supply of wagons never reached the monthly quota of 1200 wagons in Summer and 1500 wagons in Winter. The Committee have earlier stressed the necessity of evolving a proper system of assessment of demands, distribution and transport. The Committee urge that integrated planning should be undertaken to meet the requirements of Soft Coke for Delhi and other metropolitan towns as the non-availability of this domestic fuel causes widespread hardship. The Committee would also like Government to examine cases of dilatoriness in taking delivery of the stocks presumably to exploit scarcity conditions and institute prompt action against such unfair practices.

K. Supply of Hard Coke

4.107. The position regarding Demand and Supply of Hard Coke is as follows:—

(in million tonnes)

	Demand	Supply	Shortfall
1969-70	2·25	1·55	·70
1970-71	2·25	1·64	·61
1971-72	2·38	2·02	·36
1972-73	2·16	1·89	·27
1973-74	2·26	1·98	·28

4.108. There is statutory control on distribution of Hard Coke. Allocation is done consumer-wise by the Joint Coke Allocation Committee under the Chairmanship of the Coal Controller and Wagons are allotted by the Railways on the basis of allocation. This comes under Category 'C'. However, a quota of 300 wagons per day has since been fixed.

4.109. Regarding the demands from States for Hard Coke, the Coal Controller stated in evidence that most of the State Governments did not have the machinery to examine their demands quality-wise and quantity-wise. So, in a crisis of shortage, the demand was bound to be inflated. Earlier, Hard Coke was by and large drawn by middle men. The approach now was to supply coal to consumers through the State Government, the idea being that the smallest man got his quota. Some States have formed their own Corporations for taking the Hard Coke required by them.

4.110. It was stated in a note to the Committee that the demand for Hard Coke during the period August, 1973 to March, 1974 varied from 15,244 to 17,184 wagons per month whereas the average output of Hard Coke available from coke ovens other than those in the Steel Plants, was about 8,625 wagons. Further the rail transport capacity earmarked for movement of this commodity was only 300 wagons per day.

4.111. The Committee note that there have been shortfalls in the supply of Hard Coke to the extent of .70 m.t., .61 m.t., .36 m.t., .27 m.t. and .28 m.t. during 1969-70 to 1973-74 respectively. The Committee further note that the demand for Hard Coke during the period August, 1973 to March, 1974 varied from 15,244 to 17,184 wagons per month whereas the output of Hard Coke available from coke ovens other than those in the steel plants, was about 8625 wagons. Moreover, the rail transport capacity, earmarked for movement of this commodity is 300 wagons per day.

4.112. The Committee have referred earlier to the present unrealistic system of assessment of demands for Hard Coke and underlined the importance of precise assessment of demands and planning of production accordingly with a view to fulfilling the needs of the small scale industries using Hard Coke. The Committee have also referred to the assessment made by the Committee on Assessment of requirements of Hard Coke and desired that a rational and scientific assessment be made based on the yardsticks evolved by that

Committee. The Committee have also emphasised the need for making the State Governments responsible for assessment of demands and distribution of this commodity to the industries falling in their sector.

4.113. The Committee urge that early action be taken on these recommendations and suitable steps taken to see that production of Hard Coke is suitably increased and adequate transport is provided by Railways to meet the increased requirements for the movement of this coal.

CHAPTER V

MOVEMENT OF COAL

A. Introductory

Orderly and efficient movement of mineral from the mines to the consumers is a sine-qua-non to any systematic distribution system. However, as the Committee have observed elsewhere in the Report, inadequacy of transport has been found to be one of the major bottlenecks in the availability of coal to the consumer.

5.2. The bulk of the coal produced in the country is carried by railways and to supplement all rail movement for the consumers including railways, in southern and western India, movement by rail-cum-sea route is also arranged. Besides this, there is also movement by road.

B. Rail Transport

(i) *Past performance and future Plans*

5.3. The Department in consultation with the Ministry of Railways has stated in a joint note on Coal Availability that the production and despatch (by rail and by other means) and stocks of, coal during the last five years have been as follows:

(in million tonnes)

Year	Production (Raw Coal)	Despatches of raw coal, washed coal, hard coke and soft coke		Pithead Stocks (raw coal)
		By rail	By other means	
1969-70	75·74	71·00	7·16	7.08
1970-71	72·95	64·20	12·23	9.58
1971-72	72·42	65·00	15·40	7·76
1972-73	77·22	67·00	16·70	5·97
1973-74	77·87	60·62	20·22	6·65
1974-75	33·78	N.A.	N.A.	5·96
(April to August, 1974				(as on 31-8-74)

NOTE: The total despatches are more than the production as the latter includes the additional movement of washed coal and the hard coke.

5.4. The following statement shows the daily average indent, allotment and loading of coal in 4-wheeler wagons during the period 1970-71 to 1972-73:—

Fields	Daily loading target	(Daily average loading in 4 wheeler wagons) 1970—71			1971—72			1972—73		
		I	A	L	I	A	L	I	A	L
West Bengal & Bihar										
Steel	1600	1899	1386	1356	1852	1332	1300	1953	1519	1445
Washery	900	1079	633	611	978	601	592	894	622	593
Others	4100	8215	3646	3576	8172	3766	3745	6591	3725	3658
	6600	11193	5665	5543 (74·2%)	11002	5699	5637 (72·8%)	9438	5866	5696 (71·4%)
Outlying fields										
Singrauli . . .	—	68	68	68	86	86	86	104	104	107
Korea & Rewa . .	950	1132	830	824	1391	865	857	1296	932	7
Pench (B.G.) . . .	540	519	500	471	659	599	551	636	608	56
Satpura	50	42	35	32	46	41	40	50	51	1
Singareni . . .	500	523	509	459	579	521	505	624	575	591
Talcher . . .	100	83	83	77	65	65	62	74	74	1
	2140	2367	2025	1931 (25·8%)	2826	2177	2101 (27·2%)	2784	2344	228 (28·6%)
GRAND TOTAL . . .	8740	13560	7690	7474	13828	7876	7738	12222	8210	7983

I denotes—Indent
A denotes—Allotment
L denotes—Loading

5.5. The abstract of the daily average indent, allotment and loading of coal in 4-wheeler wagons during the years 1970-71, 1971-72, 1972-73, 1973-74 and for each month upto August, 1974, is given below:—

(Daily average loading in 4-wheeler wagons)

Year	West Bengal—Bihar			Outlying fields			Total		
	(I)	(A)	(L)	(I)	(A)	(L)	(I)	(A)	(L)
1970-71	11193	5665	5543	2367	2625	1931	13560	7690	7474
1971—			(74.2%)			(25·8%)			
1971-72	11002	5699	5637	2826	2177	2101	13838	7876	7738
			(72·8%)			(27·2%)			
1972-73	9438	5866	5696 (71·4%)	2784	2344	2287 (28·6%)	12222	8210	7983
1973-74		(a)			(a)		9794	7888	7228
April' 74		(a)			(a)		10816	7823	7140
May '74		(a)			(a)		9341	7505	7324
June '74		(a)			(a)		(b)	(b)	8061
July '74		(a)			(a)		10159	8435	8102
August '74		(a)			(a)		10272	8673	8224

(a) Figures not furnished by Department
(b) Figures not available
(I)—denotes Indent
(A)—denotes Allotment
(L)—denotes Loading
(Figures in brackets indicate percentages to total).

5.6. The Department has stated that wagon availability in Bengal-Bihar fields reached a peak in 1969-70 but started deteriorating from the middle of 1970-71 onwards as can be seen from the following table:—

Year	Daily average loading (in terms of 4-wheeler wagons)
1965—66	5840
1968—69	6070
1969—70	6242
1970—71	5612
1971—72	5733
1972—73	5805
1973—74 (upto 31-1-1974).	5299

5.7. It has been stated that production as well as rail transport of coal in 1969-70 were adequate to meet the coal demands from all sectors. A daily average coal loading of 8191 wagons was reached during the year, consisting of 6242 wagons in Bengal-Bihar coalfields and 1949 wagons in outlying coalfields. During this year, the demand for coal from different consumers was not only met in full but due to a glut of coal particularly in North India, there had been a slump in demand, in the first 4 months of 1970-71 while the loading in outlying coalfields has been steadily going up ever since. There had been a slide back in the case of Bengal-Bihar coal-fields, particularly during 1970-71 and 1971-72 due to serious dislocation in railway working in the eastern sectors of the country on account of various anti-social activities including extensive thefts of railway materials and equipment, innumerable bunds and strikes, public interference in train running by squatting on track and even attacks on railway stations and staff. The position was further aggravated due to very heavy emergency movements for feeding millions of evacuees from Bangladesh, transport of POWs from Bangladesh etc. While there was a slight improvement in coal loading in Bengal-Bihar coalfields during 1972-73, it could not reach the levels attained in 1969-70 on account of the railway operations, being seriously affected due to extensive power cuts and load shedding by DVC and Bihar State Electricity Board, which not only affected train running on electrified routes but also maintenance of locomotives and wagons in workshop and supply of water to steam locomotives. 1973-74 had been parti-

cularly a bad year for the Railways due to a spate of staff agitations, 'work to rule', 'go slow' etc. The locomen and carriages and wagon staff agitation in August, 1973 followed by a spate of agitation in the following months and again the locomen's strike during December, 1973 very severely affected coal loading, particularly in the Bengal-Bihar coal-fields.

5.8. The outlay for Railway development programme during the Fourth Five Year Plan was originally estimated at Rs. 1525 crores which was scaled down to Rs. 1400 crores as a result of the Mid-term Appraisal. The target for movement of coal during the Fourth Five Year Plan which was included in the estimate of total rail traffic during the Fourth Plan, was 84.4 million tonnes which was later revised to 77.5 million tonnes at the time of Mid-term Plan Appraisal.

5.9. The Task Force on Coal and Lignite had assessed the coal requirements by the end of the Fifth Plan as 143 million tonnes and had estimated the rail transport requirements for coal at 125 million tonnes by the end of the Plan. The production of coal as tentatively targetted in the Draft Fifth Five Year Plan is 135 million tonnes and a revised programme for 145 million tonnes is under the examination of the Planning Commission.

5.10. The Railways have stated that the total provision during the Fifth Five Year Plan is 100,000 wagons (in terms of 4 wheelers). No decision regarding year-wise procurement has been taken so far, in view of constraints of resources. During the year 1974-75, the first year of the Fifth Five Year Plan, 14,000 wagons (in terms of 4 wheelers) are expected to be procured.

5.11. It has been stated that in view of the magnitude of the problem involved, two Study Teams were set up in October, 1972 to assess the requirements of rail transport of coal for the Fifth Plan and the facilities required, one dealing with the movement of coal from Bengal-Bihar coalfields and the other from outlying coalfields. The Teams have submitted their Reports.

5.12. A Task Force which was constituted in March, 1973 to prepare a plan for rationalisation of coal loading arrangements in the Bengal-Bihar coalfields has also submitted its Report.

5.13. It has been stated in a memorandum to the Committee that "assuming a demand for 93 million tonnes per year, there has to be daily average despatch of about 11,000 wagons. The current despatch is within 8,400 wagons. Shortage of wagons is therefore the first bottleneck. But there are others relating to line capacity, yard con-

gestion, turn round time of wagons, lack of sufficient coordination between the different zonal railways etc. Among suggestions for improvement, the most important are: an adequate fleet with 10 per cent cushion, doubling of certain highly congested lines such as the Grand Chord along with yard expansion, and quicker unloading and reloadings at the transhipment points.

5.14. The Committee enquired as to what improvements were being effected to secure a better performance to cope with the Plan demands The representative of the Ministry of Railways stated during evidence that according to present trends, for a production of 93 million tonnes of coal, about 25 to 30 million tonnes will possibly move by means other than rail. The quantum of movement by other means including the wastage in conversion into coke or washing in the washeries was assessed at 22 million tonnes in 1973-74 with a production of 80 million tonnes. On that basis, not more than 70 million tonnes would require rail transport. To move one million tonnes of coal in a year would require 125 wagons per day and on that basis about 8750 wagons would be required to be loaded daily to clear the quantum of 70 million tonnes by rail. Actually an internal target for movement of coal from different fields was fixed at 9000 wagons. In fixing the internal target, 20 per cent cushion was kept, to make up cases of shortfall. Actually a loading level of about 8300 wagons per day was reached in 1969-70, including a loading level of about 6250 wagons from Bengal and Bihar and about 1950 wagons from the outlying coalfields. This loading from outlying coalfields had been steadily going up. It had gone up by about 400 wagons per day and the present level was 2300 to 2350 wagons but Bengal and Bihar loading had been coming down.

5.15. The witness stated that the position regarding loading from Bengal and Bihar had been the worst in 1973 due to chronic railway staff troubles, such as strikes by recognised or unrecognised unions, agitations such as 'work to rule', 'mass casual leave' coming to duty but not doing the work. A number of negotiations have been held on very high levels with the different labour leaders and a number of amenities have been given. It was hoped that there would be a respite.

5.16. The Railways have also been the targets of attacks for varieties of reasons, mostly unconnected with the railways working, such as squatting on the tracks, burning of coaches, attacks on stations for inter-State disputes etc. Most of the Trunk routes were working with very high density and for any upset, there was hardly any cushion to make up.

5.17. The witness further stated that so far as the resources of the Railways were concerned, the resources were adequate or commensurate with the present level of traffic. An exhaustive study had been made of all the resources that were required in the Fifth Plan to cope with the progressive increase in coal traffic and all other traffic.

5.18. Regarding supply of wagons, Railways lifted 207 million tonnes of originating traffic in 1969-70 with nearly 71 million tonnes of coal with a certain holding of wagons and locomotives and a certain track capacity available for movement. Additions were being made during the intervening years. In the last two years of the Fourth Plan *i.e.*, 1972-73 and 1973-74 substantial additional orders for new wagons were also placed. For the Fifth Plan procurement of about a lakh of extra wagons was programmed.

5.19. Regarding programmes for improvement, the representative of Ministry of Railways stated during evidence that so far as locomotives were concerned an adequate number of diesel and electric locomotives was provided to haul the additional wagons on the basis of the pattern of traffic.

5.20. So far as doubling of highly congested lines are concerned, the doubling of some sections on the Grand Trunk route had already been done and the rest were under construction.

5.21. Modern signalling and telecommunication facilities like automatic signalling in congested routes like the Grand Chord route of the Eastern Railway were being provided. A section of the Baroda route was already electrified and the section from Madras to Bezwada was being electrified. Certain other routes were also under examination.

5.22. The capacity of each central yard had to be reviewed in the context of additional traffic which the areas would be called upon to handle in the Fifth Plan and the required expansion had already been programmed and would be taken up on hand.

5.23. Steps had been taken to increase the capacity of handling in different yards by mechanisation. Automatic retarders for retarding the velocity of the wagons were being provided. Steps were being taken to improve signalling arrangements to increase the capacity of the yards.

5.24. The Railways had already taken a policy decision to progressively unify the gauge and convert the existing metre gauge into broad gauge. Certain conversions were already under way.

5.25. Steps were being taken in the meantime for partly mechanising the transhipment arrangements. Wherever possible, steps had been taken for releasing the wagons for transhipment as quickly as possible. Additional transhipment platforms and additional labour had been provided.

5.26. Regarding short term and long-term measures to improve the movement of coal in consultation with other Ministries, the Department has stated in a note to the Committee that an officer was placed on special duty for studying the rationalisation of the coal loading points, for improving the existing loading and despatch arrangements in the Bengal-Bihar coalfields. Certain broad decisions have been taken in regard to the Bharat Coking Coal Ltd., collieries on the following lines:—

(1) Existing loading arrangements from innumerable colliery sidings constitute a major obstacle to the transport of coal and there is immediate need of rationalisation.

(2) Loading should be confined to a few selected points so as to get the benefit of bulk transport and plan should be taken in hand for remodelling of colliery sidings, abandoning the colliery sidings etc., as necessary.

(3) Recommendations made by the Coal Transport Study Team regarding final layout of the proposed loading points and the mechanisation of the loading arrangements should be examined and planned jointly by Railways and Bharat coking Coal Ltd., as the loading potential builds up.

(4) The details for rationalised loading arrangements should be worked out jointly by the Railways and the Bharat Coking Coal Ltd., and agreed proposals should be executed without any delay.

The Railways and the Bharat Coking Coal Ltd., have already initiated action in implementing the above recommendations.

5.27. As far as Coal Mining Authorities are concerned, the recommendations of the coal rationalisation Study Team reports are being examined but a salient feature of the scheme is to reduce the loading points from 352 to 121 in the Raniganj fields by extending lengths of existing sidings joining the adjacent sidings together and laying of new lines for handling block rakes. The placement of block rakes would enable loading of coal in bulk at a single point instead of being dispersed over several colliery sidings as at present, so that once the block rake is loaded, it can be transported to destinations expeditiously.

5.28. In order to meet the requirements for movement of coal during the Fifth Five Year Plan, both the Coal Traffic Study Teams for Bengal-Bihar and outlying fields have recommended certain immediate as well as long-term measures. Action has already been initiated to implement the immediate measures. As far as long term measures which are linked with the anticipated development of Coal Mines during the Fifth Plan, the same are under examination in consultation with the Department of Mines *viz* Coal Mines Authority and Bharat Coking Coal Ltd. Surveys will be taken up as soon as the comments of the Coal Mines Authority Bharat Coking Coal Ltd., are received to enable investment decisions being taken on projects for execution and completion within the Fifth Plan.

5.29. It was stated during evidence that the number of railway sidings for coal in India was over 1200. The proposal was to reduce them, as the proposed arrangement was that the coal was moved in future in block rakes as far as possible. Therefore, a number of small sidings would be eliminated. In the Raniganj collieries, the existing 380 loading points were now proposed to be reduced to 120. In the Jharia coalfields, the existing 685 loading points were suggested to be reduced to 75.

5.30. To the query whether coal was kept in sufficient quantity at the railway siding for loading of wagons, the witness stated that at least three or four days' stock should be kept to enable a rake to be loaded and that instructions have been issued for transporting coal from various collieries so that enough stock was built up at sidings.

5.31. As regards road transport facilities for carrying coal from the pithead to the railway sidings, the witness stated that in some cases the road transport facilities had to be increased. In some other cases road movement may not take place as movement was by conveyors etc.

5.32. It was further stated in evidence that in all the new collieries it was proposed, where feasible, to set up bunkers for fast loading of wagons and instal weigh bridges so that weighment can take place simultaneously. It was also proposed to get some loading equipment so that fast loading of wagons can take place. In addition, for marshalling of wagons at a few selected places, wagon winches may have to be employed.

5.33. It has been further stated that the Railways are initiating several schemes in consultation with the Ministries of Steel and Mines, Irrigation and Power etc., for better utilisation of the existing

assets and for improving route and other facilities for moving the coal at the projected level of coal production in different fields. In addition various staff problems which are coming in the way of improved railway operations are being handled at the highest level in conjunction with the Ministry of Labour. Close liaison is being maintained with the State Governments and other agencies to check public demonstrations and other anti-social activities affecting railway operation. Preferential arrangements are being made to inject more wagons and locomotives in coal loading circuits to improve coal loading even under the existing constraints of slow movement and drop in productivity due to various staff agitations etc., detention to wagons at loading and unloading points and changes in offer of coal for rail transport in recent months. A close liaison is being maintained not only at the Ministerial level at Delhi but at the Headquarters level also at Calcutta and in the field level to match the availability of coal with rail transport.

5.34. It has already been stated in Chapter IV that a High Level Standing Committee which was set up in August, 1973 with the Deputy Minister of Steel and Mines as its Chairman, is looking into the problems relating to transportation and distribution of coal. In pursuance of the decision of the High Level Standing Committee, a sub-Committee under the Chairmanship of Shri G. D. Khandelwal, former Chairman, Railway Board, was appointed to examine different methods of reducing detention time of wagons within the steel plants, washeries and mines. The sub-Committee has submitted its report and necessary action is being taken by the Railways and the Department of Steel.

5.35. As already mentioned, a note furnished by the Department regarding the High Level Committee indicating the decisions made by the Committee and the action taken thereon is given at Appendix III.

5.36. As recommended by the High Level Committee, the Joint Monitoring Cell to deal with the difficulties in day to day movement of coal has started functioning. It consists of the Director Rail Movement (Chairman) and high level representatives of Steel Authority of India Ltd., Coal Mines Authority and Coal Controller. This Cell resolves difficulties faced in the day to day movement of coal wagons. Efforts are being made to step up the level of loading.

5.37. A note regarding the functioning and achievements of the Joint Monitoring Cell is given at Appendix VI. It is seen that as

against an average daily loading of 7,392 wagons between August 1973 and May 1974 the average daily coal loading since June 1974 has been as follows:

	Wagons
June, 1974	3060
July, 1974	8090
August, 1974	8223
September, 1974	8493

(ii) *Linkage of Bulk consumers with coalfields.*

5.38. The Task Force on Coal and Lignite has suggested Linkage of bulk consumers of coal as indicated below:—

(i) Linkage of coalfields to washeries.

(ii) Linkage of raw coal to Washeries.

(iii) Linkage of washed coal to Steel Plants.

(iv) Linkage of middlings to Power Houses.

(v) Linkage of major industries to coalfields.

5.39. The report of the Study Team for Transport Planning during Fifth Five Year Plan has stated that so far as the linkage of consumers with coalfields are concerned, the same is available only for railway loco and Power Houses. Railways have linked loco coal programmes coalfield-wise. The Linkage Committee set up by the Planning Commission has so far linked 43.85 million tonnes of coal and middlings out of 51.5 million tonnes allocated for thermal stations by the end of the Fifth Plan:

(in million tonnes

Coalfields	Quantity allocated by Task Force	Quantity linked for P. Houses by 1978-79
1	2	3
Bengal-Bihar	15·80 6·5 (middlings)	17·86
Singrauli	7·39	7·10
C. I. C.	5·60	5·688

1	2	3
Korba	2·70	1·917
Pench/Kanhan/Tawa	4·35	2·716
Maharashtra	3·00	2·402
Talcher	1·40	1·630
Singareni	4·85	4·529
	51·50	43·845

5.40. According to the Report of the Study Team, indications are also available for the following additional requirements of coal by the Power Houses:

Coalfields	Power Houses	Requirements (In M. Tonnes)
Bengal-Bihar	(i) Obra expansion by 400 MW	1·20
	(ii Tuticorin (New Rail-*cum*-sea route)	1·32
	(iii) Ennore (Diversion to rail-*cum*-sea route)	0·5
Pench/Kanhan/Tawa	Satpura (Expansion)	1·8
Maharashtra	Chandrapur (New)	1·2
Singareni	Vijayawada (New)	1·2
Korba	Korba (New)	1·2
Not Linked	Panipat (New)	0·66
		9·08

5.41. The Report of the Study Team further states that:

"Linkage of middlings to Power Houses and raw coal to Washeries is yet to be done. Some linking of washed coal to Steel Plants was done by Dutt Committee in 1969-70 but the same has to be recast taking into account the requirements of other steel plants. Linkage of other major consumers is also to be done still. Apart from linking coalfields, bulk consumers should be linked to individual collieries. In the absence of firm linkages, planning of rail transport is difficult as it is not known

for certain whether the existing pattern of movement will continue and what would be the pattern of increased requirements. Unfortunately, the Ministry of Mines has not been able yet to finalise these linkages nor able to give direction-wise movement pattern of coal route-wise to enable meticulous calculations of rail transport capacity required and rolling stocking requirements, which are, therefore, being worked out on the basis of the current pattern of movement. Detailed linkages between collieries and bulk consumers are, however, being pursued with Bharat Coking Coal Ltd., and Coal Mines Authority."

5.42. As pointed out in para 4.5 of this Report, it is noticed that the Standing Linkage Committee has since finalised the linkings in respect of Thermal Power Stations and also the allocations in respect of Cement Industry.

5.43. Regarding choice given to consumers hitherto to select collieries according to their requirement for getting supplies against their monthly quota, it was stated in evidence that it would be difficult after nationalisation to continue the past practice in the interest of more rational distribution. Today it would be considered waste of transport. Because coal production was under one authority today, it was possible to supply the consumer from the nearest source, thus making optimum use of available transport facilities.

5.44. The representative of the Ministry of Railways (Railway Board) informed the Committee that the entire country had been divided into different zones in relation to the coalfields serving a hinterland. The Bengal-Bihar fields supplied coal mostly to the eastern and northern India. The Central India coalfields supplied to Western India and Maharashtra. Singareni and Talcher coalfields supplied coal to South India and Orissa. The basic principle followed was that if the same quantity of coal was available in the nearby coalfields, then the same type of coal was not allowed to be transported from Bengal-Bihar coalfields unless the quantum of coal available fell short of the demand.

5.45. It was also stated during evidence that whenever a new coal mine was established. the movement planning was done in consultation with the Railways.

5.46. The Committee note that over 90 per cent of the coal produced is the country, is carried by Railways. The Committee have

indicated in the Chapter on "Supplies" that inadequacy of transport is one of the major bottlenecks in the availability of coal to the consumers. The Committee regret to note that the despatches by rail in 1969-70 which reached a peak at 71 million tonnes have come down to 64, 65, 67 and 60.6 million tonnes during 1970-71, 1971-72, 1972-73 and 1973-74 respectively. The daily average loading of coal which was 8191 wagons in 1969-70, has dropped to 7474 in 1970-71, 7738 in 1971-72, 7983 in 1972-73 and 7228 in 1973-74. This decline in despatches has been attributed to a slide back in transport in the Bengal-Bihar coalfields which originate more than 70 per cent of the coal traffic. The daily average loading from those fields dropped from 6242 wagons in 1969-70 to 5612, 5733, 5805 and 5299 wagons during 1970-71, 1971-72, 1972-73 and 1973-74 respectively. This decline has been ascribed to anti-social activities, Indo-Pak conflict, refugee problem, withdrawal of troops, staff agitations, extensive power cuts etc.

5.47. The Committee are greatly concerned that the performance of the Railways has been consistently poor after the peak in 1969-70 and that it touched the lowest level in 1973-74. They are distressed at the decline in loading of wagons which has adversely affected the supply of coal to the consumers and consequential decline in production in many industrial sectors.

5.48. The Committee are unable to comprehend why the Railways which were to be geared to move the targetted traffic of 84.4 million tonnes of coal traffic during the Fourth Five Year Plan (later revised to 77.5 million tonnes at the time of Midterm Plan Appraisal) could move only about 60 million tonnes of coal during the last year of the Plan; which is 17 million tonnes less than the revised target and 11 million tonnes less than what was actually carried in the first year of the Fourth Plan. In this context it is pertinent to recall that the Railways have made a capital investment of over Rs. 1400 crores during the Fourth Plan and there is no reason why they should not have developed the capacity for carrying at least 77.5 million tonnes of coal traffic (if not 84.4 million tonnes as originally envisaged in the Fourth Plan) when the money made available for the Plan was fully expanded. The Committee are not impressed with the general reasons which have been advanced by the Railways for this unsatisfactory performance in the matter of transport of coal. The Committee feel compelled to draw pointed attention to this shortfall in the movement of coal by Railways which has had such wide repercussions on economy and stress that detailed and thorough planning (direction-wise, route-wise etc.) should now be done at least for each year of the Fifth Five Year Plan to ensure that

Railways move in full the coal required by various industries and consumers all over the country.

5.49. The Committee note that recently there has been improvement in the daily average loading of wagons which has increased to 8224 in August, 1974 and 8493 in September, 1974. The Committee have no doubt that with concerted and well directed efforts and optimum utilisation of the existing facilities by the Railways, it should be possible for them to increase the daily loading of wagons considerably so as to meet fully the needs of coal movements to the consuming centres.

5.50. The Committee note that the production of coal which was tentatively fixed at 135 million tonnes in the Draft Fifth Five Year Plan, may go up to 145 million tonnes if the revised programme, proposed by the Department, is accepted. The Task Force on Coal and Lignite has estimated the rail transport requirements of coal at about 125 million tonnes by the end of the Plan. The Committee were informed during evidence that for moving one million tonnes of coal in a year, the daily requirement of wagons will be about 125. On that basis, the transport of 125 millions tonnes of coal by rail would require daily average loading of 15,625 wagons.

5.51. The Committee have earlier pointed out that the annual estimated percentage increase in production of coal during each year of the Fifth Five Year Plan over the previous year, is of the order of 16 per cent, 9.7 per cent, 12.6 per cent, 13.5 per cent and 10.4 per cent respectively. Viewed against the daily average loading of 7,228 wagons during 1973-74 and 8493 wagons in September, 1974, the provision of matching rail transport for the increased coal production during each year of the Fifth Plan, rising to a daily average of 15,625 wagons in 1978-79, poses challenging task for the Railways. This task calls for concerted efforts in streamlining the transport system and infusing it with a purpose and dynamism for optimum utilisation of existing resources. It is also of the utmost importance that adequate attention is paid to rail transport planning in regard to the development of additional capacity, provision of modern signalling and telecommunication facilities etc. The problems of coal movement in the Bengal-Bihar areas need serious attention and removal of all constraints which come in the way of movement (direction-wise, route-wise etc.) of coal.

5.52. The Committee in Chapter III have referred to the provision of transport for coal movement during the Fifth Plan from Bengal-Bihar and Outlying Coalfields where the projected increase in production as compared to 1973-74, is estimated to be of the order of

36.80 million tonnes and 30.44 million tonnes respectively. The Committee have recommended a study in depth regarding the feasibility of maximising production in outlying coalfields where the daily average loading of wagons has shown more improvement from time to time than that obtaining in the Bengal Bihar Coalfields. The Committee would like Railways to develop sufficient transport capacity in the outlying coalfields in coordination with Coal Mining Authorities so as to be able to move any additional quantity of coal which may be required from thereby consuming sectors, particularly the Thermal Power Stations, on account of switch over to coal consumption in the light of the oil crises.

5.53. It is well known that linkages of major consuming sectors with coalfields are imperative for an efficient transport system. The Committee note that the Standing Linkage Committee has finalised the linkages in respect of Thermal Power Stations and also the allocations in respect of Cement Industry. The Committee would urge that the linkage of coalfields to other major industries and washeries and of washed coal to steel plants should be expedited. The Committee need hardly emphasise that the linkages should be firm and effective and should be reviewed from time to time to remove bottlenecks in the way of smooth and efficient movement of coal to consuming centres. The Committee have no doubt that in fixing linkages, it would be ensured that bulk consumers are linked to the nearest coalfields with a view to reduce the lead to the minimum possible so as to economise on transport costs.

5.54. The Committee need hardly stress that plans for increased production of coal should be fully tied up with the Railways to make sure that coal is moved from the pithead to the users in adequate quantities and in time.

5.55. The Committee note that two Study Teams of the Railways have assessed the requirements of rail transport of coal and the facilities required during the Fifth Plan—one dealing with Bengal-Bihar coalfields and the other dealing with Outlying Coalfields. The Committee also note that a Task Force has prepared a plan for rationalisation of coal loading arrangements in the Bengal-Bihar coalfields. Another Committee under the Chairmanship of Shri G. D. Khandelwal has submitted a report recommending measures for reducing detention time to wagons within the steel plants, washeries and mines. These Reports contain various suggestions regarding layout of loading points, mechanisation of loading arrangements, loading in block rakes, reduction in number and remodelling of colliery siding etc. The Committee urge that the recommendations contained in the re-

ports of the Study Teams, the Task Force and the Khandelwal Committee should be examined expeditiously, in consultation with the coal mining authorities, the Railways, major consumers etc., and decisions taken and implemented without delay. A firm time-bound programme should be prepared to implement such of the recommendations as are accepted by Government, in the interest of efficient movement of coal to the consuming centres.

5.56. The Committee note that there are about 1200 railway sidings from which loading of coal in wagons takes place at present. In the Raniganj coalfields, there are 380 loading points for coal which are proposed to be reduced to 120. In the Jharia coalfields, there are as many as 685 loading points which are sought to be reduced to 75. The Committee have no doubt that in the context of nationalisation of coal mines it should be easier to rationalise the loading points with a view to increase their loading potential as also to improve wagon usage. The Committee would like Government to take effective action in this behalf as per a time-bound programme.

(iii) Wagon detention.

5.57. On the question of railway wagons which were not used by the Coal Mines Authority and were returned empty, the Department has stated that:—

> "The Coal Mines Authority came into existence only on 31-1-1973, when the management of the non-coking coal mines was taken over under the Coal Mines (Taking over of management) Act, 19793. The figures of wagons returned empty are available with them only from July, 1973 and that too, for the Eastern Division (E. Railway) and Pench. The required information for these two areas is as follows:

(Figures in four-wheeler wagons)

Month	Average No. of wagons loaded		Daily average No. of wagons returned empty in respect of	
	E/Division (E. Rly.)	Pench	E/Division (E. Rly.)	Pench
July, 1973	1610	367	13	Not available
August, 1973	1425	342	7	"
September, 1973	1620	361	11	"
October, 1973	1419	343	16	8
November, 1973	1570	398	12	3
December, 1973	1568	362	18	3
January, 1974	1533	398	8	1

It may be seen from the above figures that the wagons returned empty constitute a very small fraction of the number of wagons loaded. Besides, it may be stated that the empty return of wagons does not necessarily indicate non-availability of coal. Usual reasons for empty return of wagons are labour trouble, breakdown, power failure, erratic supply of wagons regardless of the proportion and sequence of steam and slack fractions, defective wagons, placement of wagons at wrong places etc."

5.58. The Department has also stated that the number of wagons left behind and drawn empty in Bengal Bihar coalfields have gone down as may be seen from the following figures:

	No. of wagons "left behind" and "drawn empty"
October, 1973	14,973
November, 1973	11,820
December, 1973	7,099
January, 1974	9,920

5.59. The Department has explained that in October, 1973, the figures were high due to comparatively low pithead stock and a large number of labour holidays.

5.60. The Department has given the following information in respect of collieries under Coal Mines Authority Ltd., regarding "left behind" and "drawn empty' wagons on the Eastern and South-Eastern Railways during August and September, 1973.

	Total number of wagons Loaded in Eastern and S.E. Rlys.	Number of wagons drawn empty and left behind	Percentage
August, 1973	83,173	5,563	4·7%
September, 1973	86,100	3,720	4·3%

5.61. The Department has clarified that "the incidence of wagons being left behind or drawn empty for non-availability of coal cannot be assessed separately. While efforts are being made and would continue to be made by the producers to minimise the extent of deten-

tion with better coordination between their own and the Railway field staff, as small percentage is bound to continue or reasons beyond the control of either party." The Department has further stated that wagons "left behind" are not hauled back empty. They are loaded subsequently. Such "left behind", therefore, imply wastage of wagons for a day. The wagons "drawn empty" however, mean withdrawal of the wagons from the sidings as empty; but the incidence of the same is very low, being about 25 wagons a day. This is negligible considering that about 5300 wagons are loaded per day.

5.62. The Committee note that in the collieries under the Coal Mines Authority in August, 1973, 5563 wagons and in September, 1973, 3720 wagons were "drawn empty" and "left behind". In the Bengal-Bihar coal-fields in October, 1973, 14,973 wagons were "left behind" and "drawn empty" on account of low pit-head stocks of coal and due to a large number of holidays. Even in January, 1974, 9,920 wagons were "left behind" and "drawn empty".

5.63. The Committee are surprised that no record regarding the empty running of wagons on account of non-availability of coal at the pit-heads are being maintained by the Coal Mines Authority/ Railways. In the absence of such data, it is not possible to find out whether the wagons are detained or drawn empty on account of any lapse on the part of the Coal producers or the Railways. The Committee consider that in their own interest, the coal producing organisations namely CMAL and BCCL should maintain complete record about the allotment and movement of wagons. In the case of "left behind" and "drawn empty" wagons, the reasons for detention and empty running should be specifically indicated. As the department itself has stated that the incidence of "left behind" and "drawn empty" wagons is hardly 25 wagons per day, it should not be difficult for the coal producers to maintain such statistics and to analyse them in the interest of taking timely remedial measures.

5.64. The Committee recommend that a continuous analysis should be made of the reasons of wagons "left behind" and "drawn empty" so that effective steps may be devised to reduce them to the minimum. It should be realised that detention of wagons, besides causing heavy expenditure on demurrage, constitutes a national waste from the point of view of utilisation of available transport capacity.

(iv) Speed of loading

5.65. The Department has stated that loading of wagons is generally completed within the time permitted by the Railways. Some

of the collieries already have bunkering facilities with mechanical loading arrangements to load a rake within the prescribed time. Such facilities would be created in more collieries as considered necessary in the Fifth Plan, to improve turn round of wagons.

5.66. The sidings in the Jharia coalfields work predominantly as manual loading units. For reorganisation of the collieries, the Bharat Coking Coal have sought Polish collaboration. They would be reorganising the sidings in close association with the Railways. For reorganised bigger mining units, they contemplate mechanised or semi-mechanised loading arrangements.

5.67. The Singareni Collieries have already taken steps or better turn round of wagons.

5.68. The object of improved turn round of wagons can, however, be achieved not only by improving the facilities at the loading point to reduce the loading time but also by cutting short detention in yards and on the run by the Railways.

5.69. Asked whether there was any intentional slowing down in the supply of wagons after nationalisation, the representative of the Ministry of Railways stated during evidence that it was not so. The availability of wagons dropped, even where there was no nationalisation of the collieries. This was due to unprecedented disturbances, dislocation and interferences with the normal workings of the railways. The railway resources which could load about 8020 wagons of coal per day in 1969 had not been depleted; they have actually gone up during the intervening period. Today there was no dearth of stock. Liaison with the coal producers was hundred times superior because it was nationalised and supervision was centralized. There was a joint cell for watching day-to-day operation. There were meetings between the Secretaries in New Delhi; there were meetings at different levels of officers, management and the Railways. All were quite conscious of their responsibility to see that the coal reached the consumers.

5.70. There were various factors which were trying to impede efforts of the Railway in meeting the demand of the consumers. But this fact remained that even now coal was reaching the consumers at the same old level as seen from production and pithead stocks. There were different means of conveyance. Many industries were taking by conveyor belts and ropeways. The overall availability of coal for consumers cannot be said to have come down appreciably.

5.71. The representative of the Ministry of Railways stated during evidence that loading time for coal in respect of ordinary wagons was 5 day-light hours and 5—10 day-light hours in respect of box wagons. Further there was another system called pilot-to-pilot system which takes into account the time required for loading a rake of coal in any particular group of siding.

5.72. The witness said that it was true that if the wagons are not ready, duly loaded, when the engine visits, the engine cannot afford to wait because the engine crew works on a particular duty roster. Whenever the wagons are detained, demurrage was charged unless there were convincing reasons for not doing it. The movement of pilots was watched at very high levels in the divisional offices and the chances of corrupt practices were not very great. Details regarding the time by which a pilot leaves and other such matters are tabulated and checked daily by the divisional superintendents but with all this, if somebody indulged in corrupt practices, it was very difficult either to accept or deny them. Steps have been taken to look into these things. There were on deputation certain Railway officers to BCCL/CMAL. The General Managers of the Areas and the Chairman BCCL/CMAL meet very frequently. Any dispute was decided locally.

5.73. The Secretary of the Department said that there had been much greater understanding as the difficulties at the loading points have been understood and settled. What was needed now was placement of rakes. There had been a better coordination prevalent these days, though it cannot be said to be ideal.

(v) Pilferages.

5.74. It has been represented to the Committee that there is heavy shortage in the contents of the coal wagons and the consumers haye to tear substantial financial losses. The Director, Coal Mines Authority stated during evidence that their responsibility was for sale on f.o.r. colliery basis.

5.75. The representative of the Ministry of Railways stated that it was difficult for the Railways also to keep a watch over the wagons right through their transit covering hundreds and hundreds of kilometres. Some of the big collieries have the weighbridge right at the load point. Weighbridges were provided at colliery Depot yards but not at destinations. The wagons went to a variety of points. It was not possible to provide weighbridge in all points. For this purpose, siding accommodation to back the rake was required at

each point, shunting engines etc., in addition to weighbridges. This they had not got. In certain cases where the contents were probably short, special arrangements were made to reweigh to the extent possible.

5.76. All the new collieries are being provided with weighbridges on the spot. It was a fact that there were pilferages in yards also. A very extensive network of railway protection force had been put in and augmented at vulnerable spots.

5.77. If it was owners' risk, the onus of proof that there was negligence on the part of Railways was on the consumers. If it was railway risk the onus of proving that there had been no negligence was on the railways. But there was no guarantee that even at railway risk, the claim for pilferages *en route* from open wagons could be entertained.

5.78. The Committee note that in order to have fast loading, some collieries have bunkering facilities with mechanical loading arrangements to load a rake within the prescribed time. They further note that such facilities would be created in more collieries to improve turn round of wagons and that sidings are being reorganised in close consultation with the Railways. The Committee trust that with improved facilities at the collieries, the delay in loading of Coal wagons would be minimised resulting in improved turnround of wagons. They would, however, like that a close and continuous watch should be kept to eliminate detention of wagons in coalfields.

5.79. The Committee note that there are complaints of short receipt of coal by consumers and pilferages of coal during transit. The difficulty is stated as due to lack of weighbridges at the concerned points. The Committee recommend that cases of short supply of coal should be investigated and stern action taken in cases of pilferage so as to serve as a deterrent to others. The Committee suggest that as the sidings from which loading of coal is done, are now being rationalised, it should be possible to provide weighbridges at suitable points to obviate complaints of short despatch etc. from the consumers.

C. Transport, by rail-cum-sea route

5.80. It has been stated that the bulk of the coal produced in the country is carried by the railways and to supplement all-rail movement for the consumers including railways in Southern and Western India, movement by rail-*cum*-sea route is also arranged. In case of

movement by rail-*cum*-sea, the coal is carried by rail from colleries to the Calcutta Dock and loaded in ships. Most of the movement by sea is from collieries situated in Raniganj coalfield which is nearest to the dock. A subsidy at a fixed standard rate is paid by the Government to the consumers drawing coal by rail-*cum*-sea route.

5.81. The Department has furnished the following information regarding the subsidy scheme in force relating to rail-*cum*-sea movement of traffic:

> "In the late Fifties the rail transport capacity for the movement of coal from Bengal-Bihar coalfields down south was found inadequate as the Southern Railway was not in position to handle the entire demand of loco coal and also for the industries situated in Southern India. The Rail-*cum*-sea route Coordination Committee, therefore, made a general recommendation in 1957 that there should be greater diversion of coal traffic to coastal shipment. By 1961 the pressure on rail transport capacity to move coal from the above coalfields further increased and acute difficulties were felt to meet the demand by rail in the directions above Moghalsarai and *via* Waltair. The Government of India, accordingly, decided in May, 1961, that coastal shipping should be utilised to a greater extent than before for moving coal from Calcutta to ports in Southern and Western India. A target of 2 million tonnes per annum was set up for the movement of coal by rail-*cum*-sea route."

5.82. It has been stated that the cost of transport by rail-*cum*-sea route from the Raniganj coalfield to various destination ports in Southern and Western India including port dues, handling charges etc. is higher than the cost of transport by the all-rail route. The difference between the present standard rate by rail-*cum*-sea route and the all rail freight varies from about Rs. 23 per tonne to about Rs. 46 per tonne for different ports.

5.83. The following table shows the actual despatches of coal by

the rail-*cum*-sea route from the beginning of the scheme and the amount actually paid as subsidy:—

Year	Despatches (in m.t.)	Amount of subsidy paid (in lakhs of Rs.)
1961-62	1·52	213·16
1962-63	1·93	356·43
1963-64	1·76	472·15
1964-65	1·49	375·36
1965-66	1·11	269·89
1966-67	0·75	215·00
1967-68	0·52	184·37
1968-69	0·49	115·81
1969-70	0·63	155·16
1970-71	0·17	69·45
1971-72	0·59	149·31
1972-73	0·63	219·81
1973-74	0·59	229·60

5.84. The quantity of coal moved by ships to the coastal ports in India during the last five years and the percentage of such movement to the total annual production of coal have been as follows:—

(Figures in million tonnes)

Year	Quantity moved by ships	Annual production	% of col. (2) to col.(3
(1)	(2)	(3)	(4)
1968-69	0·49	71·41	0·69
1969-70	0·63	75·74	0·87
1970-71	0·17	72·95	0·25
1971-72	0·59	72·42	0·82
1972-73	0·63	76·40	0·82
1973-74	0·59	77·87	0·75

5.85. The Department has intimated that the movement of coal by coastal steamers has increased during 1974-75. It is expected that during 1974-75 about 1 million tonnes of coal would be moved by this route.

5.86. During evidence the representative of the Department stated that movement of coal by ships was not economical nor were the coastal shipping facilities available to the extent these were needed. Presently 0.7 to 0.8 million tonnes of coal was moved per year by coastal shipping. The need for coastal shipping and for augmenting the transport fleet was recognised but unfortunately on account of the neglect of coastal shipping in the earlier years, it was found difficult to get adequate number of ships now. In 1974-75, 1.7 million tonnes of coal was proposed to be moved by ships. Movement of nearly 6.5 million tonnes of coal by coastal shipping was being planned by the end of 1978-79.

5.87. In this connection the representative of the Ministry of Shipping and Transport stated that during the First and Second Five Year Plans, there was coastal movement of coal to the extent of 1 million tonnes per year from Calcutta to Southern and Western Ports. Since the movement of coal by sea was costlier than movement of coal by rail route, a subsidy scheme was introduced in 1961 to make up for the difference between the freight rate by rail-*cum*-sea route and the direct rail route. It was decided that a coal cess should be levied to provide funds for the subsidy with the intention that 2 million tonnes of coal should be moved each year by the sea route since the rail capacity as assessed then was found to be inadequate.

5.88. The witness further stated that in order to sustain the coastal shipping tonnage it was necessary that some guaranteed movement should be made available so that the ships which were going out of use could be replaced. When the matter was taken up with the Railways, they assured that 5 lakh tonnes of coal could be moved per year by coastal shipping. As a result of this assurance, the shipping tonnage in 1971 was 5 lakhs and in 1972, 5.8 lakh tonnes. During the calendar year 1973, 7 lakh tonnes of coal was moved by sea. It was further stated that according to indications, 17 lakh tonnes of coal would be moved by sea route during the year 1974.

5.89. Regarding the steps being taken in the Fifth Plan period for transportation of coal by sea to Southern and Western India to meet the increasing demand for coal, the Department has stated:—

"The Haldia port with mechanical facility for handling 3.5

million tonnes of coal per annum is expected to be commissioned during 1974. The capacity of this port to handle coal can be increased to 5 million tonnes in due course. In addition Calcutta port can handle 1.5 million tonnes of coal per annum. New vessels have been ordered for the coastal trade. The gross registered tonnage of coastal vessels is programmed to increase from about 2 lakh tonnes to 6 lakh tonnes in the Fifth Plan. They are capable of transporting 5 to 6 million tonnes of coal per annum. At the unloading ends, Tuticorin harbour is being remodelled and mechanical unloading facility for coal is expected to be available. The Trombay Power Station is being advised to provide unloading arrangements for coal at Trombay which would enable the transport of 1 million tonnes of coal from Bengal by rail-*cum*-sea route to the existing power stations."

5.90. A further communication received from the Department states that as per the latest indication the Haldia Port is likely to be commissioned in August, 1975.

5.91. The Committee note that in May, 1961, it was decided by Government that coastal shipping should be utilised to a greater extent for moving coal from Calcutta to ports in Southern and Western India. A target of 2 million tonnes per annum was fixed for the movement of coal by the rail-cum-sea route. As the transport of coal by the rail-cum-sea route was found to be more expensive on account of higher freight, a subsidy scheme was also introduced for payment of subsidy on coal moved by ships.

5.92. The Committee regret to note that except one year viz. 1962-63, when about 2 million tonnes of coal was moved by coastal ships, the despatches of coal by ships have been very low. In 1970-71 only 0.17 million tonnes were despatched by rail-cum-sea route. In 1971-72, 1972-73 and 1973-74, the movement of coal by rail-cum-sea route showed slight improvement but it was only 0.59, 0.68 and 0.59 million tonnes respectively.

5.93. The Committee are unable to comprehend how the movement of coal by the sea route has been kept down to only 25 per cent of the target fixed therefor in the Fourth Five Year Plan especially when acute shortages of coal were being experienced time and again in the southern and the western region of the country. The Committee feel that having regard to the need for development of coastal shipping, the huge investments made in development of

major and intermediate ports like Vishakhapatnam, Madras, Tuticorin, Mormugao, Bombay, Kandla etc. and the development of Haldia Port to handle 3.5 million tonnes of coal it should be possible to have an integrated approach regarding movement of coal by coastal shipping particularly to destinations in the southern and western zones of the country. The Committee recommend that the Planning Commission should have firm targets (port-wise and destination-wise) with proper linkages with collieries and consumers so that the quantum of coal to be moved by sea and the agency for movement, Shipping Corporation of India etc. are specified and concerted measures taken to implement this plan in letter and spirit in the interest of making available in time the requisite quantities of coal to the consumers and the overall interest of developing coastal shipping which is vital for a country with an extensive coast like ours.

D. Road Transport

5.94. It has been stated that about 1.5 lakh tonnes of coal is moved by road every month to meet the requirements of some power stations and washeries etc. for which there is a permanent linkage with the coal fields. In addition, about 30,000 tonnes of coal is moved by road every month by various other consumers. The movement of Hard Coke and Soft Coke by road is estimated at 30,000 tonnes and 8,000 tonnes per month respectively.

5.95. The despatches of coal by road are as follows:

(in million tonnes)

Year	Production	Despatches by road
1970-71	72·95	10·710
1971-72	72·06	13·019
1972-73	76·40	15·575
1973-74	77·87	16·000 (approx.

5.96. The Department has stated that the movement of hard coke and soft coke has to take place by road not only because of non-availability of wagons but also because of the fact that a number of the producing units do not have the facilities of a railway siding. Even otherwise, some consumers particularly those located near the

mines prefer to move their requirements by road. For these reasons, substantial quantities of Soft Coke and Hard Coke have been moving by road even during the periods when the wagon shortage was less acute or absent.

5.97. The Department has further stated that the comparative cost of moving coal by road and rail depends on the distance to be covered. For example, the comparative freight by road and rail from Mugma area to Calcutta is as under:—

By Road	Rs. 35 to 45 per tonne (prior to the increase in prices of diesel and petrol in November, 1973).
By Rail	Rs. 14·50 per tonne.

5.98. The Committee note that despatches of coal by road have increased from 10.7 million tonnes in 1970-71 to 16 million tonnes in 1973-74. Thus a large quantity of coal is moved by road even though road freight is higher than the rail freight. It has been stated that movement of coal by road is not essentially for want of wagons but due to other reasons also, like absence of railway siding at certain coal producing units, as also preference of some consumers, particularly those located near the mines, to move their coal by road. The Committee consider that with the enormous increase in the production of coal envisaged during the Fifth Plan, the movement of coal by road, would increase substantially. They, therefore, recommend that the Department of Coal and the Ministry of Shipping and Transport should examine the potential and economic viability of road transport for the movement of coal and the extent to which this mode of transport can supplement the rail transport during the Fifth Plan period.

5.99. The Committee need hardly stress that while preparing schemes for development of roads, due care should be taken of the needs of the coal fields in Bengal-Bihar area and other outlying coalfields. The road development schemes should also take into account the location of the various coal dumps as in the absence of good roads, the Railways' programme of moving coal, only in rake loads to the coal dumps, may be seriously affected. Further as distribution of coal to the consumers from these coal dumps will have to be arranged by road, it is imperative that utmost importance is given to the development and maintenance of roads for this purpose.

5.100. The Committee further recommend that Government should undertake a detailed study of the transport requirements for the movement of coal during each year of the Fifth Plan and decide upon the most economic, efficient and feasible mode of transport viz.,

by rail, road, coastal-shipping, inland water etc. which would meet the requirements and make necessary and timely arrangements therefor so that transport does not become a bottleneck in increasing coal production. It would be desirable if the mode of transport from each coal field is decided in consultation with the linked consuming industry. The Committee recommend that such a study should be completed expeditiously, so as to make for development of best suited and most reliable, economical and efficient means of transport facility.

CHAPTER VI

COAL WASHERIES

A. Past performance and future plans

The availability of good quality coking coal being limited in the country, it is necessary to conserve the existing resources and to improve upon the quality of available coal to make it fit for use in steel plants. This is sought to be achieved by (a) washing available metallurgical coal to reduce the ash content; and (b) increasing the use of weak or semi-coking coal in blends with good coking coal.

6.2. It has been stated that "Ever since ferrous metallurgy in India received high priority in the post-independence period, large scale beneficiation of high-ash coking coals has been introduced to support the iron and steel plants. The problems relating to our coking coal and consequent need for their upgrading arise because of (i) increased demand for coking coals and progressive machanisation of mining operations (ii) inadequate reserves of prime and medium coking coals and the attendant need for their conservation and (iii) the inferior quality of coking coal reserves. For the purposes of pig iron production in the conventional manner, iron ore and specified quality of coking coal are required in almost equal proportions.

At the present level of production, the average ash content of Indian coking coals remains in the range of 22-24 per cent. In inferior coking coals, this ash level often goes up to 28 to 30 per cent. As against this, the metallurgical coal is required to contain between 15 and 17 per cent ash, the exact level being dictated by the volatile matter content of the coking charge. So, it becomes indispensable to reduce the ash content of coking coals to the level of 17 per cent or below through adoption of coal washing techniques.

Apart from ash reduction, washing is supposed to yield more or less consistent clean coal product, which in turn, ensures better quality of coke and improved efficiency in blast furnace operation."

6.3. There are at present fifteen coal washeries in India of which the one, earmarked to upgrade non-coking coal for Association Cement Company's own use in their cement works, is located in Central India

coalfield and the other fourteen meant for the beneficiation of metallurical coal have been established in or around the Bengal and Bihar coal-fields.

6.4. Of the fourteen coking coal washeries, three with a combined hourly capacity of about 1000 tonnes per hour (equivalent to around 4 million tonnes of rated feed input per annum) are owned by the private sector Steel Industries like TISCO and IISCO, five Central washeries having a total installed capacity of 2,660 tonnes per hour (10.3 m. tonnes per annum), belong to Hindustan Steel, four pithead washeries with a combined input rate of 2,500 tonnes per hour (9.6 m. tonnes per annum) have been installed by NCDC at their mines, while the balance two having a total rated capacity of 430 tonnes per hour (1.75 m. tonnes per annum), are under the Durgapur Projects Ltd., of the Government of West Bengal and Bharat Coking Coal Ltd.

6.5. Brief details of the 14 coking coal washeries are given below:

(i) *Central Washeries*

The Hindustan Steel Limited had established 5 washeries for beneficiating high ash coking coal to ensure supply of good quality washed coal to the steel plants. These five washeries are known as Dugda I, Dugda II, Bhojudih, Patherdih, and Durgapur.

These washeries except Durgapur have now come under the administrative control of Bharat Coking Coal Limited.

The washery attached to the Durgapur Steel Plant remains under the control of the General Manager, Durgapur Steel Plant.

(ii) *Lodna Washery*

The Lodna washery which was set up by Lodna colliery company in 1954 and was commissioned in 1955 came under the management of the Bharat Coking Coal Limited consequent on the take over of the coking coal mines and their subsequent nationalisation.

(iii) *Washeries of National Coal Development Corporation*

National Coal Development Corporation had, under operation, three washeries namely, Kargali, Kathara and Sawang all in East Bokaro coalfield. Another washery, namely, Gidi in Karanpura field was commissioned in November, 1970. All these are pithead washeries and are now under the administrative control of the Coal Mines Authority Ltd.

(iv) *Washery of Government of West Bengal*

Durgapur Projects Ltd. (DPL) Washery at Durgapur is the only washery which is owned by any State Government namely the Government of West Bengal.

(v) *Private Sector Washeries*

There are three coal washeries in the private sector namely Jamadoba, West Bokaro and Chasnala. The first two at Jamadoba and West Bokaro are owned by the Tatas and were set up in 1952 and 1951 respectively in Bihar State. The washery at Chasnala was set up by Indian Iron and Steel Company (IISCO) in 1968.

6.6. Thus, it is seen, that there are in all 14 Coking Coal washeries which are in operation at present both in the Public and private sectors.

6.7. Two statements, one showing the annual rated capacity of the washeries and the actual raw coal input and another showing the production performance in terms of capacity for clean coal production and actual clean coal produced are given at Appendix VII|VIII.

6.8. An analysis of the statement is given below:

(1) The total rated capacity for raw coal input of the 14 washeries is 26.02 million tonnes which will be 23.18 million tonnes if Gidi Washery, which was not working is excluded. The raw coal inputs during 1971-72, 1972-73 and 1973-74 are 10.32 million tonnes, 11.3 million tonnes and 11.3 million tonnes respectively, the percentage rated capacity utilisation working out to 39.6 per cent, 43.4 per cent and 43.4 per cent respectively. Excluding Gidi Washery, which was not working, the percentages work out to 44.8 per cent, 49.4 per cent, 49.4 per cent respectively.

(2) If the washeries are classified in the order of percentages of utilisation, the position will be as follows:—

Percentage utilisation	Name of Washery	Rated Coal Capacity	Remarks
1	2	3	4
		Million tonnes	
Less than 10%	Gidi	2·84	Not in operation till 1973-74
10—20%	Durgapur (DPL)	1·25	

1	2	3	4
		million tonnes	
20% to 50%	Dugda-I	2·4	derated to 1·8 million tonnes
	Dugda-II	2·4	
	Durgapur (HSL)	1·5	
	Chasnala	2·50	
	Kathara	3·00	
	Sawang	(a) 1·00	
above 50%	Patherdih	2·00	
	Bhoujudih	2·00	
	Jamadoba	1·44	
	Lodna	·40	
	Kargali	2·72	
	West Bokaro	·57	
	Total (b)	26·02	

6.9. A statement showing the capital investment and year of commissioning of the washeries is given at Appendix IX. The investment in the public sector washeries is seen to be Rs. 561.3 million.

6.10. The output of clean coal from the washeries during 1972-73 and 1973-74 is 8.31 million tonnes and 8.44 million tonnes respectively.

6.11. The Department has stated that the performance of the Washeries is guided by the following factors:

(a) Demand for washed coal from steel plants.

(b) Regular and timely supply of box empties by Railways for loading clean coal and middlings.

(c) Availability of adequate quantity of suitable quality of raw coal and their receipt at the washery in proper type of wagons for which the washery has been designed.

(d) Disposal of middlings|by products.

6.12. The causes for shortfall in output of the Washeries have been given as—

(a) non-availability of adequate number of wagons, and Railways' inability to move the required quantities of raw coal

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At the time of factual verification the Department has stated the figures as under:—

(a) .75 million tonnes

(b) 25.77 million tonnes

in suitable types of wagons for which the washery is designed.

(b) Reluctance of steel plants for using the coal washed at Kathara.

(c) Power interruptions.

(d) No firm linkage of sinks.

(e) Industrial relation problems.

(f) Unsatisfactory availability of spare parts.

6.13. Asked what steps had been taken to improve the capacity utilisation in the coal washeries, the representative of the Department stated that the Technical Committee on Washeries had gone into that question in 1971 and some recommendations were made by the Committee for improving the performance of the washeries. It would take about 2 years time to bring about the necessary improvements so that the washeries could work upto 75 per cent of their rated capacity.

6.14. Regarding the performance of the coal washeries in 1960—70 the Technical Committee on Coal Washeries (1970-71) have observed as under:

"From the achievement of the operating washeries in 1969-70 (excluding Kathara and Sawang), it would be recorded that against their rated feed input of about 18.78 million tonnes per annum, the actual raw coal feed to these washeries totalled 11.05 million tonnes, constituting about 59 per cent of their potential capacity. While the private sector washeries with the exception of ISSCO's Chasnala washery could operate almost at 100 per cent load factor, the public sector washeries excluding D.P.L. washery at Durgapur could utilise on the average about 63 per cent of their available capacity. Amongst the public sector washeries, the utilisation capacity of both the Bhojudih washery of H.S.L. and the Kargali washery of N.C.D.C. was quite satisfactory, reaching the level of around 80 per cent as compared to the bottom level of 34 per cent, achieved in the Dugda I washery of H.S.L. On the other hand, Gidi washery of N.C.D.C. has continued to remain idle since its commissioning in 1970, while the other two N.C.D.C. washeries at Kathara and Sawang as well as the IISCO washery at Chasnala have been able to utilise only in recent months about 15 to 20 per cent of their rated capacity."

6.15. The Report further states that:—

"Average recovery of wet clean coal as loaded for despatch from all the washeries combined together was about 69 per cent in 1969-70 as against 73 per cent recorded earlier in 1966. Only in the case of Bhojudih washery of HSL, the recovery of clean coal remained around 85 per cent, while in most of the other washeries it ranged between 55 to 75 per cent. The average ash content of clean coal recovered in 1969-70 was 17.2 per cent, although its variation in the individual washeries was anything from 15.9 to 18.7 per cent. The total moisture content of the cleaned products generally ranged between 5 and 10 per cent."

"While the load factor and the inefficiency of operation are primarily responsible for limiting the performance of any washery, the recovery of clean coal is influenced both by the nature of raw feed as well as the constructional and operational features of the washery."

"Some external factors, which have largely been responsible in limiting the utilisation capacity of central washeries in particular and pithead washeries in general are transport bottleneck in the movement of raw and/or washed products, problems in the ready availability of essential spares as well as uncertain demand and irregular off-take of washed products, specially middlings."

"Some inherent limitations in the design of baths and circuits of a number of washeries are to be removed to ensure better performance. In several cases, the quality of raw coal supplies has to be improved by proper planning of production from mines. There is also much room for streamlining the washery operation and for properly coordinating its activities with that of other related agencies."

"With more intensive mechanisation of the coal mines, essentially needed to augment and economize coal production, the quality of the raw coal is likely to deteriorate further and may adversely affect the recovery of clean coal in the coming years. But this can be safeguarded to a large extent by rectifying the deficiencies of the existing washeries and making provisions for slurry benefication, wherever they are now lacking."

6.16. The draft Fifth Five Year Plan provides for stepping up the washery capacity for prime and medium coals by 10 million tonnes

In this connection, the Department has stated that "Schemes for setting up of 4 new washeries to produce group (a) (Prime coals) and group (b) (Medium coals) have been prepared by the Bharat Coking Coal Ltd., and Coal Mines Authority during the Fifth Plan period. Two washeries, with a capacity of 2 million tonnes each, at Monidih and Sudamdih are proposed for washing of prime coal. For washing of medium coking coal, washeries are proposed to be set up at Ramgarh and Kedla Pundi each with a capacity of 3 million tonnes per annum. With the setting up of these washeries, additional washing capacity to the extent of 10 million tonnes will be available."

6.17. The total provision for ten million tonnes additional washing capacity during the Fifth Plan period is Rs. 55 crores.

6.18. It is noticed from the Report of the Task Force on Coal and Lignite that an output of 13.35 million tonnes of washed coal has been estimated from the existing washeries even after carrying out the modifications suggested by the Technical Committee. This will leave a deficit of 2.68 million tonnes for meeting the estimated requirements of steel plants in 1978-79. The new washeries are, therefore, to be planned for not only covering this deficit but to meet the demand for coking coal which is bound to increase steeply in the early years of the Sixth Plan.

6.19. The Committee note that there are at present 14 coal washeries for washing coal, out of which 11 are operating in the Public Sector and the other 3 in the Private Sector. The total rated coal capacity per annum of all the washeries, is *26.02 million tonnes. The raw coal input of all the washeries during 1971-72 and 1972-73 was 10.32 and 11.38 million tonnes respectively. The percentage utilisation of capacity of all the washeries taken together works out to 39.6 per cent during 1971-72 and 43.7 per cent during 1972-73. Excluding the Gidi washery which was not in operation, till 1973-74 the percentage utilisation works out to 44.8 and 49.4 per cent respectively, which is very low. The output of clean coal in 1972-73 and 1973-74 was only 8.31 million tonnes and 8.44 million tonnes respectively. The shortfall in output has been attributed to the non-availability of adequate number of wagons, reluctance of steel plants for using the coal washed in certain washeries, power interruption, lack of firm linkage for sinks etc.

6.20. The Committee note that the Technical Committee on Coal Washeries had analysed the performance results of coal washeries in 1969-70 and had observed in their Report (1972) that excluding Kathara and Sawang washeries, the actual raw coal feed had been

*At the time of factual verification the Department has stated the figure as 25.77 million tonnes.

11.05 million tonnes per annum which constituted about 59 per cent of their potential capacity. The Technical Committee also pointed out that the public sector washeries excluding D.P.L. washery at Durgapur, could utilise on the average about 63 per cent of their available capacity.

6.21. The Technical Committee also felt that the factor which was mainly responsible for low utilisation of capacity of central washeries in particular and pit-head washeries in general were transport bottlenecks in the movement of raw and washed coal, non-availability of essential spares and irregular off-take of washed products specially middling. The Technical Committee also emphasised the need for improvement in the designing of baths and circuits of a number of washeries.

6.22. From the latest figures of utilisation of capacity of the coal washeries both individually and collectively the Committee feel that during the years after 1969-70 the performance of coal washeries has not shown any positive improvement and was less than 50 per cent of the rated capacity.

6.23. The Committee view with great concern the poor performance of the washeries on which a capital investment of about Rs. 56 crores has been made.

6.24. The Committee note that steps have been taken for improving the performance of the washeries and that it would take about 2 years' time to bring about the necessary improvements so that the washeries could work up to 75 per cent of the rated capacity. The Committee regret the delay in implementing the recommendations of the Technical Committee. The Committee would like Government to ensure that all the major constraints like transport bottlenecks in the movement of raw and washed coal, non-availability of essential spares for the efficient working of coal washeries and removal of inherent defects in designing of baths and circuits and lack of planning in supplying coal of requisite quality from the coal mines to the coal washeries are removed expeditiously. The Committee also urge that in the light of experience gained concrete measures should be taken to maximise the utilisation of the capacity of the existing washeries.

6.25. The Committee note that the washing capacity is sought to be increased by 10 million tonnes, during the Fifth Plan period at an estimated cost of Rs. 55 crores. The Bharat Coking Coal Ltd., and Coal Mines Authority Ltd. are having schemes for setting up

4 new washeries during the Fifth Plan period. Two washeries with a capacity of 2 million tonnes each, are proposed to be set up at Monidih and Sudamdih for washing prime coking coal. For washing medium coking coal, 2 washeries with a capacity of 3 million tonnes each, are proposed to be set up at Ramgarh and Kedla Pundi. According to the estimate of the Task Force on Coal and Lignite, the existing washeries are estimated to produce 13.35 million tonnes of clean coal against the estimated requirement of 16.03 million tonnes during 1978-79 and that the proposed new washeries are necessary not only for meeting the deficit but also to cater to the increased requirements that will be thrown up during the Sixth Plan.

6.26. The Committee are unhappy to note that the existing washeries which have a throughout capacity of *26.02 million tonnes for raw coal are expected to achieve only 13.35 million tonnes of clean coal even after carrying out the improvements recommended by the Technical Committee. Considering the heavy investments made in the existing washeries the Committee recommend that all out efforts should be made to optimise the functioning of these washeries before setting up new units. The Committee would like this matter to be examined in depth. If it is considered to be an inescapable necessity to set up the proposed new washeries, the Committee would like to sound a note of caution that the difficulties and bottlenecks encountered in the working of the existing washeries to their full capacity should be fully taken into account and provided for while planning the new washeries so as to ensure their efficient functioning.

B. Performance of Some Individual Washeries

(a) *Gidi Washery*

6.27. It has been stated that Gidi Washery was completed and commissioned in November, 1970. Since there is no market for such washed coal, the plant is remaining idle since March, 1971. The throughput capacity of this washery is 2.84 million tonnes of raw coal per annum.

6.28. Explaining the reasons why the washery has remained idle, the Department has stated as under:

> "Gidi Washery was originally conceived for washing of some specific coal seams in Karanpura with a view to supply washed steam coal to Railways and washed Slack coal

*At the time of factual verification the Department has stated the figure as 25.77 million tonnes.

to the Steel Plants for use as blendable coal. Subsequently, when the construction of the Washery was in progress, Railways showed disinclination to accept the washed steam coal. On completion of the Washery, no market of washed coal could be found as the Steel Plants were reluctant to use Argada-Sirka washed coal as a blendable constituent in the overall blend. The capital investment of the Washery is about Rs. 9.5 crores. The Washery is now under trial-run based on medium coking coal of the West Bokaro field. Depending upon the trial performance some modification may have to be done in the Washery."

6.29. Asked during evidence whether at the time of setting up the washery any detailed study was conducted regarding utilisation of the coal to be washed in that washery, the Department has stated that the Expert Committee on coal consumption on the Indian Railways (1958) recommended the setting up of washeries for washing non-coking coals for the Railways. The Government accepted in principle that in order to enable the Railways to get selected grades of coal, washeries should be established. The Gidi washery was projected on the basis of this recommendation.

6.30. The Department has further stated that:

"The Railways are unable to use this coal as they find that the cost of washed coal is too high compared to the cost of raw coal and hence their consequent decision to use more of grade I coal instead of selected Grade Coal. In the case of Steel Plants, there is at present sufficient raw blendable coal available to meet their current requirement which has not risen as expected, due to slow progress of the steel production as compared to the Third and Fourth Plan targets."

6.31. The total loss on account of non-functioning of Gidi Washery after it was commissioned in November, 1970 and upto 31-3-1973 is stated to be Rs. 162.31 lakhs. The expenditure was mainly on wages, salaries of maintenance staff, depreciation and interest on loans.

6.32. The Department has further stated that in October, 1973 when there was acute shortage of medium coking coal, it was decided to process on trial basis the washing of medium coking coal from some of the newly taken over collieries. During the period October, 1973 to March, 1974, 33,362 tonnes of raw coal have been

processed through the washery and the washed coal despatched to the various steel plants. The Coal Mines Authority is satisfied with results of the washing and the steel plants have also not made any complaint regarding the washed coal. The Bhilai Steel Plant has confirmed the acceptability of this coal.

6.33. No modification as such was necessary in the coal washing processes in the main plant. Some arrangements had, however to be made to receive raw coal by road transport from the taken over mines. To this extent, additional bunkers and receiving arrangements were required to be made at an approximate cost of Rs. 2 lakhs.

6.34. Gidi washery can be run as an economic unit if the washed Argada and Sirka seam coals for which the washery was designed, can be marketed to the extent of 75 per cent of the washery capacity.

6.35. Since the Gidi washery is not on revenue account, profit/loss is not ascertained.

6.36. The Committee note that Gidi Washery with a capacity of 2.84 million tonnes of coal per annum and a capital investment of Rs. 9.5 crores was commissioned in November, 1970. The washery was originally conceived for washing some specific coal seams in Karanpura with a view to supply washed steam coal to Railways and washed slack coal to the steel plants for use as blendable coal. The Committee further note that both the Railways and the steel plants were reluctant to use the coal produced by this washery. The Railways find that the cost of washed coal is too high, compared to the cost of raw coal and consequently the Railways took a decision to use more of Grade I coal. instead of selected grade coal. As regards steel plants, there is at present sufficient raw blendable coal available to meet their current requirement which has not risen as expected, due to slow progress of steel production.

6.37. The Committee are deeply concerned to note that Gidi Washery which was set up in November, 1970 at a capital cost of Rs. 9.5 crores, had remained idle for want of market and this has resulted in a total loss of Rs. 162.31 lakhs upto 31-3-1973. The Committee are not sure whether the economics of the whole project had been worked out in sufficient detail before it was decided to set

up this washery. Normally the cost of washed coal to be produced by this washery, should have been worked out and the concurrence of the Railway Administration should have been obtained therefore. Similarly, the extent of utilisation of the slack coal to be produced in this washery for the steel plants, should have been fully considered. The Committee regret to observe that the Gidi Washery is a case of frittering away of public funds, without any consideration about the viability and remunerativeness of the Project and the marketability of the product. The Committee recommend that the whole matter should be thoroughly investigated with a view to fix responsibility on the persons concerned.

6.38. The Committee note that trials were made to process the washing of medium coking coal in this washery from some of the newly taken over collieries and the results have been found satisfactory. The Committee hope that earnest steps will now be taken to utilise the coal washed by the Gidi washery. If any modifications are necessary to improve the quality of the washed coal, the same should be introduced immediately so that this washery does not remain inoperative any longer. The Committee would like an integrated plan to be formulated to make this washery run on economic lines, by ensuring a steady demand for its product.

(b) *Kathara Washery*

6.39. The utilisation of capacity in the Kathara washery under Coal Mines Authority was only 12.3 and 13.7 per cent during 1970-71 and 1971-72. During 1972-73 and 1973-74 the utilisation of capacity rose to 38.5 and 43.4 per cent respectively. The low utilisation is stated to be on account of the reluctance of steel plants to use the coal produced in this washery and also due to non-availability of rail wagons in a regular manner.

6.40. Explaining the reasons as to why the Steel Plants are reluctant to use the washed coal from Kathara washery, the Department has stated that "as long as the Kargali washery was meeting the requirements of Steel Plants, they preferred the Kargali washed coal on consideration of both quality and price. With the increase in demand, Kathara Coal is being increasingly used in the Steel Plants. In view of this, there is no question of diverting it to other units and whatever quantity of washed coal is produced in this

washery, is now expected to be utilised fully in the Steel Plants themselves."

6.41. Regarding the losses incurred on account of low utilisation of capacity in Kathara washery, the Department has stated:

> "Kathara washery was brought into Revenue account from 1-4-1971. The loss incurred for 1971-72 was Rs. 101.28 lakhs and for 1972-73 was Rs. 35.23 lakhs. Thus, the total loss from 1-4-1971 to 31-3-1973 was Rs. 136.51 lakhs. The care and maintenance expenses for Kathara Washery for the year 1970-71 were Rs. 10.64 lakhs. Had this washery been brought into Revenue Account with effect from 1-4-1970, the loss for the year 1970-71 would have been Rs. 103.64 lakhs."

6.42. The Committee regret to note that the capacity utilisation of Kathara Washery in terms of clean coal production was only 12.3 and 13.7 per cent during 1970-71 and 1971-72 respectively. Even after some improvement during 1972-73 and 1973-74 it was only 38.5 and 43.4 per cent respectively. The Committee are concerned to note that the washery has suffered a loss of Rs. 136.51 lakhs during the period 1-4-1971 to 31-3-1973 on account of low utilisation of capacity.

6.43. The low utilisation in the earlier years has been attributed to the reluctance of steel plants to use the coal produced by this washery. This is yet another example of defective planning of the washery capacity.

6.44. The Committee would like Government to take necessary remedial measures to improve the capacity utilisation of this washery to the maximum and to ensure that the washed coal, produced by the washery, is fully utilised. The Committee feel that firm agreements should be concluded with the consumers before establishing a washery on which heavy investments are made so as to avoid the problems of pricing and off-take of the finished products which arise later on.

C. Middlings and Conversion of two stage washeries into three stage washeries

6.45. Middlings are by-products of the process of cleaning coal in three-statge washeries. Sinks are the by-products in two stage washeries. Both middlings and sinks are used as fuel by Thermal Power Plants. A statement is given below, showing the produc-

tion of the Middlings and sinks from the washeries and the power stations which are linked to the washeries:

(in million tonnes)

	1970-71	1971-72	1972-73	Power Station linked
Kargali Washery . . .	3·66	3·69	3·83	Bokaro
Kathara Washery . . .	1·55	1·68	3·36	Patratu & Bokaro Steel
Dugda I Washery . . .	·22	·23	·23	Chandrapura
Patherdih	·42	·39	·33	Durgapur
Sinks				
Sawang	·51	·62	·70	Poor market for sinks
Dugda II	·50	·46	·47	Chandrapura
Bhojudih	·24	·22	·23	Santaldih
Lodna	(N.A.)	(N.A.)	(N.A.)	

6.46. It was stated during evidence that the supply of sinks from Dugda II to Chandrapura Thermal Power Station was stopped because of some technical difficulty in working of that power plan with the sinks. A Technical Committee went into the question about the middle of 1972 and recommended that Hindustan Steel should go for three product washing and not two product washing. This revised the recommendation of* the Energy Survey Committee (1965) which had earlier suggested that two product washing could be done.

6.47. Santaldih Power Station also stopped accepting sinks from Bhojudih Washery. Similarly Bandel Power Station was not taking the middlings from Lodna. Consequently extra demand on slack coal was created.

6.48. The representative of the Ministry of Irrigation and Power stated during evidence that as long as middlings of specified quality

*On the question of having 2-product or 3-product washeries the Energy Survey Committee had made the following observation in their Report (1965) :—

"The washeries can be operated either on a 2-product or on a 3-product basis. On a 2-product basis, giving washed coal of 17% ash, the by-products have about a 40% ash content. On this basis, our Working Group has estimated that the washery yield will be about 55% of washed coal for metallurgical use and about 45% of by-products by 1970-71. On a 3-product basis, there will be again about 55% of washed coal, about 25% of middlings with about 30% ash content and about 20% of rejects. We have investigated the economic advantage of the two alternative methods and are convinced that the balance of advantage lies with the 2-product system, so long as markets are available for the use of the by-products for electricity generation and other uses."

were received, there was no problem. It was not middlings but the rejects that went to the power station which affected the boilers very badly. There was too much of shale and stone.

6.49. It was further stated that layout plans for conversion of two-stage washeries into three stage had been prepared and that by the first quarter of 1975, the right quality of middlings which can be used in power houses will be produced.

6.50. It was also stated that the position about the nature of middlings produced in the washeries was known from the beginning and matters came to a head, only in the middle of 1973 when the D.V.C. generation went down suddenly and intensive attention was paid only at that time.

6.51. The Secretary of the Department stated during evidence that a decision has been taken that no more two stage washeries would be constructed but only three stage washeries would henceforth be constructed.

6.52. It has been suggested to the Committee that the middlings which are left behind after washing the coal at the washeries should be used by Power Houses. In this connection the Department has stated that the total raw coal washed at present is about 12 million tonnes. Of this quantity, about 5 million tonnes are washed at Bhojudih, Dugda and Sawang washeries where only two products *viz.* washed coal for steel plants and sinks are produced. As these sinks are reported to contain high ash percentage and abrasive matter, they are not being used at present as fuel. In the remaining three-product washeries, about 2.6 million tonnes of middlings are produced. Of this, about 0.9 million tonnes are used as boiler coal for the generation of power and process steam in the steel plants. The balance is utilised in public utilities (thermal power station). At present no other industries are known to use the middlings regularly though technically they can be used for the manufacture of domestic coke and for brick burning.

6.53. The Technical Committee on Coal Washeries in their Report (1970-71) had assessed that during 1969-70, the production of middlings was about 1.9 million tonnes and production of sinks was 1.1 million tonnes. Thus the combined production of middlings|sinks was around 3 million tonnes. The Committee had further stated that the total production of middlings by 1973-74 was expected to be 5 million tonnes per annum without the operation of Gidi Washery and around 5.5 million tonnes per annum with the operation of the Gidi Washery. According to the Committee, the production of

middlings by the end of the Fifth Plan (1978-79) was expected to be of the order of 9 to 9.5 million tonnes.

6.54. Regarding utilisation of middlings by the Thermal Power Stations, the Technical Committee on Coal Washeries had stated as under:—

> "The middlings|by-products are mostly earmarked for use in Thermal stations having specially designed grinders, boilers and equipment for handling bulk quantities of ash obtainable from these middlings and by-products. These special designs necessitate significantly higher capital cost, extra cost for transport or handling of coal and ash and higher maintenance cost resulting in wear and tear in the machinery. These costs have to be compensated for, if thermal stations using high ash content coal and middlings are not to be at a disadvantage in relation to power stations located outside the coking coal field areas in other parts of the country."

6.55. The Committee have also been informed that there is a project by the Bharat Coking Coal to manufacture Soft Coke from middlings. This has already been dealt with in paras 3.83—3.85 of the Chapter on Production.

6.56. The Committee note that middlings and sinks, the by-products of washeries, have been used as fuel by Thermal Power Stations and that recently certain power plants have been rejecting sinks because of the adverse effects of the excessive shale and stone contained therein on the boiler. The Committee note that a Technical Committee had gone into the question of the use of middlings in 1972 and had recommended conversion of 2 stage washeries into 3 stage so that the middlings may be acceptable to the power plants. It is unfortunate that the problem was not given due attention till the middle of 1973 when the matters came to a head with the D.V.C. generation going down suddenly. A decision has now been taken to convert two-stage washeries into three-stage and also to construct only three-stage washeries in future.

6.57. The Committee consider that if the recommendation of the Technical Committee had been implemented expeditiously, the situation leading to the damage of boilers in power houses and consequential reduction in power generation which adversely affected both industrial and agricultural production, could have been largely avoided.

6.58. The Committee note that the original decision to have 2 stage washery was based on the recommendation of the Energy Survey Committee (1965). They are concerned to note that the recommendations of an expert Committee about the suitability of the 2 stage washeries, have been proved wrong by subsequent events. The Committee urge that an enquiry be made into the whole matter with a view to fixing resposibility and assessing the extent of losses suffered by the washeries as a result of under-utilisation of capacity, by the Power Stations in the shape of damage to equipment and cuts in power supply so as to obviate such lapses in future.

6.59. The Committee note that according to the Technical Committee on Coal Washeries, the estimated production of middlings| sinks which are by-products of the coal washeries, was about 3 million tonnes during 1969-70. The same Committee had estimated that the total production of middlings/sinks by the end of the Fourth Plan (1973-74) would be around five million tonnes which was expected to increase further to about 9 million tonnes by the end of the Fifth Plan (1978-79).

6.60. The Committee would like Government to take effective steps to ensure that the middlings and sinks produced by the washeries in large quantities, are fully utilised.

6.61. The Committee have earlier referred to the scheme for manufacture of soft coke from middlings. The Committee consider that intensive research should be carried out with a view to improve the quality of the middlings and also to find out scope for diversified uses of middlings and sinks produced by the washeries in case the Power Plants are not in a position to use them.

CHAPTER VII

OTHER MATTERS

A. Plant and Machinery

(i) *General*

The draft Fifth Five Year Plan states that "the equipment required for the coal programme has been worked out in detail and standardised to the extent possible. Special purchase procedures will need to be adopted to curtail delays in the placement of orders. The total equipment requirements are estimated to be Rs. 400 crores. The availability of equipment from domestic sources has been assessed in some detail. Allocation of foreign exchange for import will have to be accorded on a priority basis."

7.2. The overall provision in the Fifth Plan for the programmes of coal production and related facilities is Rs. 737 crores. The Plan document also states that "out of the production target of 135 million tonnes, a production of about 115 million tonnes is expected to arise from expansion reconstruction and restructuring of existing mines. The balance of 20 million tonnes would come from new mines, a substantial number of which are expected to be open-cast mines which can be put into operation in a relatively short time". The Department has stated that the machinery which is being used at present in underground and open cast mines is substantially imported one. From the point of view of assessment of requirements of various types of mining machinery, the subject can be examined under three groups *viz.* (a) open-cast machinery (b) underground machinery and (c) specialised machinery for deep shaft mines.

(ii) *Open cast machinery*

7.3. In respect of open-cast mining, the Department has stated that "large scale open-cast mining was started during the Second Plan by the National Coal Development Corporation when most of the machinery was imported. Subsequently, indigenous capacity was developed by Bharat Earth Movers Ltd. (BEML) and Heavy Engineering Corporation (H.E.C.), but it is not adequate to meet the country's total needs today. During the Fifth Plan period it is expected that mechanised open-cast production may go up to 30

million tonnes per annum from the present level of 7 million tonnes per annum and the equipment availability from indigenous sources may pose some problem. It is felt that some of the heavy equipments like draglines, Blast Hole Drills, Motor Grader etc. may have to be imported. Some items of open-cast machinery which are manufactured within the country, may also have to be imported to cover timely needs until indigenous production capacity is stepped up. Increase in the capacity for the manufacture of open-cast machinery has to be given due attention."

7.4. The Department has also pointed out that "supplies of open-cast machinery from Bharat Earth Movers Ltd. have also not been put to quick use as they did not have a full complement of all parts for necessary after-sales services."

7.5. The Department has stated that the basic Open-cast Mining Equipment required for the Open-cast Mines are as follows:—

1. Draglines
2. Shovels
3. Stone Dumpers, Reaf-discharge
4. Blast hole drills
5. Dozers
6. Coal haulers|Dumpers

7.6. The position of development of indigenous capacity for the above items is stated to be as under:—

DRAGLINES

The Draglines are custom-built depending upon the type of work involved, *i.e.* the geological conditions, digging depth and dumping reach required which differs from Project to Project. No indigenous capacity has been developed in the country mainly because of the requirements being small.

SHOVELS

Heavy Engineering Corporation started manufacture of 6 cyd capacity Shovels in 1964 and supplied so far seven units to National Coal Development Corporation. The requirement for the Fifth Plan has been estimated at 100 Nos., inclusive of requirements for the takeover mines and has been intimated to Heavy Engineering Corporation well in

advance. Heavy Engineering Corporation may not be able to fulfil the entire requirements and some import may be necessary.

STONE DUMPERS

Presently these are manufactured by Bharat Earth Movers Ltd., a Public Sector Undertaking and Hindustan Motors Ltd. By and large the requirements of Dumpers have been standardised and Bharat Earth Movers Ltd. would be able to meet the requirements.

BLAST HOLE DRILLS

Stone

This is not presently manufactured in India. Recently, Revati Machine Tools, Coimbatore, has drawn up a plan and technical specifications have been finalised and order placed for two drills on trial basis.

Coal

There are three manufacturers:—

(a) Revati Machine Tools

(b) Ingersoll Rand

(c) Larsen Toubro (Failing Drill)

(a) *Revati Machine Tools*

The position is the same as for Stone Blast Hole Drills.

(b) *Ingersoll Rand*

This is an air-operated drill with air motors and its suitability has yet to be decided.

(c) *Larsen and Toubro*

This make has been in use in the projects of Neyveli, etc. This drill is not completely indigenous. The manufacturers require sizeable imported components. Tenders have been invited for getting the full technical specifications.

DOZERS

It has been standardised and the Bharat Earth Movers Ltd. have agreed to meet the full requirements.

The licenced capacity of the indigenous producers is stated to be adequate to meet the requirements of the coal industry. But actual production could not be attained in the absence of orders due to slump in coal industry since 1962. Now against an urgent need for fast development of the open-cast mines within a short time some import of components is indispensable.

COAL HAULERS|DUMPERS

With the heavy increase in the price of the Rear Dumpers supplied by BEML, Coal haulage has become very costly. The Bharat Earth Movers Ltd. has been requested to develop a suitable bottom dumper coal hauler and the design is under finalisation. Till a suitable bottom Dumper is produced by Bharat Earth Movers Ltd. or any other indigenous manufacturer, Rear Dumpers will have to be used for coal haulage also, even at a higher cost.

7.7. The Department has further stated that the requirements of open cast machinery for Fifth Plan have been indicated in advance to all indigenous manufacturers. Coal producers have also standardised equipment based on indigenous availability to avoid import.

7.8. The Department has stated that Heavy Engineering Corporation may not be able to fulfil the entire requirement of shovels and some import may be necessary. Asked about the present capacity of Heavy Engineering Corporation for production of shovels, the Ministry have stated that their present capacity for production of shovels is 24 per annum which is in conformity with their installed capacity. The Department has further stated that the present capacity of Heavy Engineering Corporation for shovels is limited mainly on account of three factors namely:—

(1) Limited capacity of the gear shop;

(2) Difficulties in the procurement of electricals; and

(3) Non-availability of required castings and forgings.

7.9. The Department has stated that these difficulties are being sorted out. The capacity of the gear shop is being increased by installation of balancing facilities. The electricals required have been projected to Bharat Heavy Electricals Ltd. Hardwar. Steps have also been taken to improve the availability of Castings and forgings.

7.10. After the bottlenecks in the production are removed, the Heavy Engineering Corporation would be in a position to step up

their production of shovels. However, as shovels are required not only for coal mines but also for iron ore mines, dam construction projects etc., import will be needed to the extent the requirements cannot be met from indigenous production. The Department has clarified that the c.i.f. value of the shovels proposed to be imported by Coal Mines Authority during the first two years of the Fifth Plan is estimated at Rs. 4.00 crores.

(iii) *Underground Machinery*

7.11. The Department has stated that during the Sixties, about Rs. 15 crores worth of machinery was imported by the private companies against loans from the World Bank. Major expansion of production from underground mines during the Fifth Plan will call for heavy investment on mining machinery in respect of long wall-face equipment, steel support, underground transport system, ventilation system, pumping system and safety equipment.

7.12. The Department has further stated that mining was taken up during the last decade, in some cases with foreign assistance and with substantial import of machinery. Although Mining and Allied Machinery Corporation was set up primarily for the purpose of manufacturing mining equipment, the recession in the coal industry greatly affected its programme and it became necessary to diversify its activities with the result that the manufacture of even the basic equipment was neglected. In the last few years, Mining and Allied Machinery Corporation have been able to develop some capacity in respect of large winders, ventilators, conveyors, etc. In spite of this development, import of underground mining machinery during the Fifth Plan will be needed. In fact, it is felt that if the proposed expansion during the Fifth Plan has to materialise, there will be need for increasing the number and capacity of manufacturers, so that time-lag in the supply of indigenous machinery is minimised.

7.13. The indigenous sources should also equip themselves suitably to be in a position to supply spare parts for the imported equipment.

(iv) *Breakdowns*

7.14. The Department has stated that "sophisticated mining equipment introduced in the country during the earlier plan periods has been rather unfortunate, mainly because of the difficulties in procuring spare parts from abroad or indigenously, and that the cost benefits that might have accrued from mechanisation had been considerably whittled down as a result of the high percentage of sick

equipment. It has been suggested that a shift towards conventional mining equipment would be desirable, that underground coal mines mechanisation using sophisticated equipment will, if any thing, not increase considerably in the near future."

7.15. Regarding the percentage of sophisticated equipment which remained out of order during the last five years, the Department has furnished the following information:—

Percentage of down-time

	1971	1972	1973
Underground Machinery			
(i) Coal cutting Machine	14%	12%	11%
(ii) Loaders	29%	29%	29%
(iii) Locomotives	6%	6%	8%
(iv) Shuttle Cars	29%	29%	29%
Open Cast Equipment			
1968—69 —			25%
1969—70 —			23%
1970—71 —			24%
1971—72 —			27%
1972—73 —			20%

7.16. The Department has further stated that to overcome this difficulty, the producing units like the National Coal Development Corporation have tried to develop many of the spares in their Central Workshop and at the same time the indigenous manufacturers have also been encouraged to develop some spares by their technical guidance, as a result of which, so many indigenous manufacturers have come up and they are now supplying most of the spares relating to the above machinery. But for want of proper raw material, the quality of some of the spares available from the indigenous sources is not satisfactory, while the spares manufactured in N.C.D.C's Central Workshops, are not sufficient in quantity to cater to all the Collieries.

7.17. The Committee enquired about the reasons for the high percentage of break-down time of the machinery in the coal mines which was 20 to 27 per cent in open-cast mines and 8 to 29 per cent in underground mines. The representative of the Department stated:—

"One of the ways of preventing heavy break-downs is to have

preventive maintenance and an adequate stock of spare parts. In the earlier stages. When the industry had not been developed properly, we had been depending on imported equipment. This means that only with the supply of equipment, the spares can be imported. Periodically we are having foreign exchange troubles with the result that it is not possible to provide adequate amount of spares for the equipment and the equipment has remained idle in many cases. The ultimate solution is indigenisation which take a little time."

7.18. The Committee note that out of the production of 135 million tonnes of coal targetted for the Fifth Five Year Plan, 115 million tonnes is likely to be produced from expansion, reconstruction and restructuring of the existing mines and the balance 20 million tonnes would come from new mines, a substantial number of which could be put into operation in a relatively short time. They further note that the cost of equipment, needed for achieving the aforementioned target, is estimated at Rs. 400 crores. Out of this, machinery and equipment of about 1|3rd in value would have to be imported. In this connection the Committee would like to draw attention to the reports of the Committee on Public Undertakings (Sixty-Fifth Report, Fourth Lok Sabha and Twenty-Fourth Report, Fifth Lok Sabha) on Mining and Allied Machinery Corporation Ltd., wherein they have pointed out that the existing capacity of 45,000 tonnes, developed in Mining and Allied Machinery Corporation for manufacture of machinery and equipment for coal mining, has been put to little use. The Committee consider that now that coal mining has been nationalised, it should be possible to have an integrated programme for manufacture of machinery and equipment for the coal mining industry. The machinery and equipment to be manufactured by Mining and Allied Machinery Corporation Ltd. should be such as is required by the industry and would make for the most efficient and economical working of the coal mines. The Committee consider that this challenge should be taken as an opportunity by Government and the Undertaking to see that 100 per cent production and even more is achieved from the existing capacity of MAMC so as to meet fully the requirements of equipment and machinery for the coal mining industry and obviate the need for imports. The Committee would like that there should be close coordination and collaboration between the two sectors viz. Coal Mining Organisations and the MAMC so as to have a long-term perspective plan for the manufacture of coal mining machinery and equipment, best suited to the needs of this industry.

7.19. As regards equipment and machinery required for open-cast mining, the Committee understand that some capacity in this behalf has already been developed in Bharat Earth Movers and Heavy Engineering Corporation. The Committee need hardly point out that Heavy Engineering Corporation is another public sector Undertaking where capacity has not been fully put to use, as pointed out in the Fourteenth Report (Fourth Lok Sabha) of the Committee on Public Undertakings. The Committee see no reason why the Heavy Engineering Corporation should not make use of this opportunity to gear fully its manufacturing programme so as to meet in full the requirements of draglines, shovels etc. required for coal mining. Similarly Bharat Earth Movers should make every effort to see that motor graders and other equipments required for coal mining for open cast coal mining, are supplied to the maximum extent possible.

7.20. The Committee would also like examination in depth regarding the need for promotion of standardisation and variety reduction in Mining machinery equipment to bring about efficiency and economy in coal mining operatons. It is imperative to standardise certain popular sizes and types, which would give the benefits of quicker delivery and easier availability of spares. Once standardisation is decided, all the Undertakings which are at present engaged in the production of mining equipment should also be entrusted with the manufacture of spares, which should be regularly made available to the coal producing organisations, so that at no time the machinery is put out of commission for want of spare parts. It is also important that norms should be laid down for machine utilisation and adhered to strictly.

7.21. The Committee note that the percentage of breakdown time of equipment both in opencast and underground mines was quite heavy during 1971, 1972 and 1973. The percentage ranged from 20 to 27 percent, in opencast mines and 8 to 29 percent in underground mines. The Committee further note that the break-down in the machinery was on account of the fact that the equipment was mostly imported and there was a problem of the availability of spares.

7.22. The Committee are concerned to note that in some cases, the machinery could not be put to use for want of spare parts. This indicates lack of advance planning for spare parts which are required frequently. The Committee urge that advance action should be taken to manufacture indigenously the requisite spare parts to the maximum extent possible, so that the costly machinery does not remain out of commission for lack of spare parts.

7.23. The Committee would further emphasise that in order to obviate loss in production due to breakdown of machinery, planned

preventive maintenance should be organised on a scientific footing in the light of experience gained. The system of maintenance in force in the plants should be examined and the weaknesses should be identified so that corrective steps are taken to remedy the state of affairs without any loss of time.

B. Explosives

(i) *Present Demand and Production*

One of the important inputs for the coal mining industry is explosives. Industrial explosives are produced in this country by three private sector concerns namely (i) The Indian Explosives Ltd., (ii) The Indian Detonators Ltd., and (iii) The Indian Oxygen Ltd. The following table indicates the capacity and actual production of explosives by these factories.

(Figures in tonnes)

Name of Factory	Licenced capacity	Installed capacity	Present production
Indian Explosives Ltd.	13,600	28,000	32,000
Indian Detonators Ltd.	15,000	10,000	7,500
Indian Oxygen Ltd.	2,000	2,000	2,000
TOTAL			41,500

7.25. The Department has stated that the present demand of industrial explosives in the country is about 34,000 tonnes per annum, out of which 15,000 tonnes are needed for the coal mining industry as indicated below:—

(Figures in tonnes per annuum)

Consumer	Permitted explosives	Non-permitted explosives	Total
A. Coking Coal Mines			
(1) B. C. C. L.	1440	200	1640
(2) T. I. S. C. O.	420		420
(3) I. I. S. C. O.	180	..	180
	2040	200	2240

B. *Non-coking Coal Mines*

(1) C. M. A. .	6180	..	
(2) N. C. D. C. . .	1140	3400	
(3) Singareni Collieries Company Limited	1800	..	12,520
	9120	3400	12,520
GRAND TOTAL			14,760

7.26. The Department has further stated that the present demand of explosives is being met fully from indigenous sources.

(ii) *Demand during Fifth Plan*

7.27. The target for production of coal has been fixed at 135 million tonnes by the end of the Fifth Plan. The Department has stated that the requirement of explosives by the end of the Fifth Plan period would not be directly proportional to the increase in production of coal but it is expected to be slightly more due mainly to the following factors:—

(i) With the adoption of modern technique in mining and increased mechanisation for greater output and higher productivity the pick mining will automatically go down and more blasting of rock and coal will be involved.

(ii) The technique of solid blasting is expected to be introduced on a large scale to have the increased production from underground mines immediately before mechanisation can be introduced to the desired level.

(iii) A substantial quantity of coal is expected to be produced from open cast mining operations, specially in the Central Indian region calling for increased consumption of explosives for removal of over-burden.

(iv) The production of lignite at Neyveli is estimated to increase to 6 million tonnes from the present level of 3.6 million tonnes and it has been proposed to introduce blasting for removal of over burden.

7.28. The Department has further stated that the country's total requirements of explosives per annum by the end of the Fifth Plan period are expected to be 77,000 tonnes, out of which the estimated share of the coal mining industry would be 35,000 tonnes comprising

26,500 tonnes of permitted and 8,500 tonnes of non-permitted explosives.

7.29. In reply to a question as to how the total production of the three Explosives factories was more than their licenced capacity, the Department has stated:—

"The original licensed capacity of Indian Explosives Ltd. was 13,600 tonnes. But to meet the ever increasing demand of explosives in the country, they had to gear up their production much beyond their licenced capacity for which they had to put all their stand-by equipment into operation. Thus, they reached the production of about 28,000 tonnes during 1970. Since the other manufacturer namely, the Indian Detonators Ltd., could not step into the market till then with their products, the excess production of Indian Explosives Ltd. had to be allowed. They approached the Government for regularisation of their excess production of 28,000 tonnes (during 1970) which was subsequently approved by the Government. But in the meantime, the demand of explosives further increased and to keep pace with the demand, they had to increase their production even beyond 28,000 tonnes. Though their production of 28,000 tonnes have been regularised by the Government as their installed capacity, they have been producing to the tune of about 32,000 tonnes currently. Indian Detonators Ltd. was granted a licenced capacity of 15,000 tonnes per annum. After tiding over the initial teething troubles, they have not obtained the final approval of their explosives for using in underground coal mines, from the concerned authorities. They are now gradually stepping up their production and have already attained the level of 8000 to 10,000 tonnes per annum. They are likely to attain the licenced capacity of 15,000 tonnes in 1975.

The Indian Oxygen Limited produce liquid oxygen which with admixture of saw dust is used as an explosive in open cast mines and quarries. The availability of liquid oxygen has been in the region of 2000 tonnes in the past and is expected to remain at the same level in the immediate future."

(iii) *Production of explosives in Public Sector*

7.30. The Department has stated that in order to meet the country's increased demand of explosives in the years to come, the Cen-

tral Government is considering a proposal to set up an explosives factory in the Public Sector. This unit will have a capacity of about 15,000 tonnes per annum of slurry based explosives. It is also proposed to set up a nitro-glycerine explosives plant with an annual capacity of 5000 tonnes in the Defence sector to manufacture conventional explosives for meeting the requirements of the mining sector.

7.31. In a subsequent note the Department has stated that "the slurry explosives project is based on the commitment of the Fertilizer Corporation of India to make available 7 thousand tonnes of ammonia from the proposed coal-based fertilizer plant. It is now felt that it will be more economical and administratively advantageous if the explosives plant is also set up by the Fertilizer Corporation of India. The Fertilizer Corporation of India are seized of the matter and are issuing an inquiry to the possible technical collaboration for this project."

7.32. It has also been stated that Engineers India Ltd. who have prepared the Project Report for the 15,000 tonnes factory have envisaged a total capital outlay of Rs. 6.05 crores which includes foreign exchange to the tune of Rs. 1.4 to 1.6 crores.

7.33. Regarding the nitro-glycerine explosive factory, the Department has now stated that the factory will be set up as a joint venture of Coal Mines Authority and the Director-General, Ordnance Factories. The Director-General Ordnance Factories is undertaking the setting up of the project and the Coal Mines Authority Ltd. will provide the necessary capital. Accordingly, a project Committee of the Officers of the Coal Mines Authority Ltd. and Director-General, Ordnance Factories has been set up for implementation of the Project. It is further stated that the capital cost of the Project is estimated at Rs. 4.9 crores with a foreign exchange element of Rs. 1.7 crores.

7.34. It is stated that both these projects will take about 4 years to reach the stage of production.

(iv) *Import of Explosives*

7.35. In reply to a question whether any explosives were being imported from abroad, the Department has stated that no explosives are being imported on a regular basis to meet the requirements of the country. But there is hardly any cushion between the present availability and demand of explosives in the country and as such, so long as normal production and regular off-take are maintained,

there is not much of difficulty in the supply of explosives to the consumers. In order to create some buffer stock, import of some quantity of explosives is under process at present.

7.36. In a subsequent note the Department of Mines has intimated that "it was proposed to import about 2,000 tonnes of explosives from Poland. It has been found that the explosive from Poland will not be suitable for use in our conditions and further the price is much higher than the indigenous production. It has, therefore, been decided to drop the proposal."

7.37. The Committee note that industrial explosives, which are one of the important inputs for coal production are produced presently by three factories in the private sector namely, the Indian Explosives Ltd., the Indian Detonators Ltd., and the Indian Oxygen Ltd. The present combined production of the three factories is 41,500 tonnes per annum out of which 15,000 tonnes are consumed by the coal mining industry.

7.38. The Committee further note that the demand for explosives is expected to go up to 77,000 tonnes by the end of the Fifth Plan out of which the estimated share of the coal mining industry would be 35,000 tonnes. In order to meet the country's increased demand of explosives, the Central Government is considering proposals to set up an explosives factory in the Public Sector, with an annual capacity of 15,000 tonnes. It is also proposed to set up a nitroglycerine explosives plant with an annual capacity of 5000 tonnes in the Defence Sector. The Department has stated that both the projects will take about 4 years to reach the stage of production.

7.39. The Committee are concerned to note that even after taking into account the production amounting to about 20,000 tonnes in the two new factories proposed to be set up, there would still be a gap of about 15,500 tonnes of explosives between the demand and supply thereof by the end of Fifth Plan period. It is also disturbing to note that the production of two new factories would be available after 4 years i.e. towards the end of the Fifth Plan period. The Committee are unable to comprehend why no provision had been made so far for meeting the gap of about 16,000 tonnes of explosives, required in the country and why the two new factories which are stated to take 4 years to reach the stage of production, were not planned earlier so as to meet the growing needs of the coal mining and other industries to enable them to increase their production. The Committee would like the Government to examine this matter in depth and take suitable measures to expedite the setting up of the two new factories for explosives in the public sector as also to make provision for meeting the deficit of 15,500 tonnes in production by

either expansion of the existing factories or by setting up new ones. The Committee recommend that the requirements of explosives for each year of the Fifth Plan period should be worked out by Government in detail and effective measures should be taken to ensure that the requisite quantity of explosives is available in time so as not to result in any interruption in production of coal etc. during the Fifth Plan period.

C. Quality Control

7.40. The quality control of coal is achieved by grading of the coking and non-coking coals. Grading is based on either the ash content only or on the basis of ash content plus moisture content depending upon whether the coal is of low moisture or high moisture variety. The coking and blendable coals have been divided into 9 qualities *viz.* Grade A, Grade B to Grade H and Grade HH. The high moisture non-coking coals of West Bengal and Bihar Coal fields have been divided into four qualities *viz*,. selected Grade A, selected Grade B, Grade I and Grade II. The gradations of the high-moisture coals have been done on the basis of ash plus moisture content of the coal as found on proximate analysis.

7.41. The low moisture non-coking coals have been divided into six grades *viz.* Selected Grade A, Selected Grade B, Grade I, Grade II, Grade III A and Grade III B. The ash content only is taken into consideration for the gradation of these coals.

7.42. The coal of the outlying coalfields except those of the Singareni and the Assam coalfields have been graded into four qualities *viz.* Selected Grade, Grade I, Grade II and Grade III. In making this gradation, the ash-moisture content of the coals have been taken into consideration. The coals of the Singareni and Assam coalfields is ungraded.

7.43. The Department has stated that during the days of control when both price and distribution of coal were controlled, the principal agency exercising quality control was the Coal Board who awarded a Grade Certificate for each individual seam, being worked in the mines after drawing seam samples. Thereafter, samples were periodically drawn from loaded coal wagons at Colliery sidings. If coal loaded from a particular colliery was found to be repeatedly inferior, the colliery was down graded. The prices were fixed depending on the quality/grade of coal. Besides the control on quality exercised by the Coal Board, the Railways have their own inspecting organisation who carry out frequent inspections of the colliery sidings while the wagons are in the process of loading.

7.44. Amongst the coal producers National Coal Development Corporation (now Central Division) had a technical cell attached to

its Sales/Marketing Department who investigated the complaints from the consumers and took remedial action. Arrangements were also made at N.C.D.C. collieries for regular sampling and analysis of coal supplied to major consumers with a view to keep a watch on quality. Besides, in the case of most of the major consumers the price was linked to quality based on analysis results of samples jointly drawn.

7.45. The Department has further stated that whenever complaints are received regarding inferior quality these are investigated and corrective action is taken. In the case of a large number of major consumers *e.g.* Railways, steel plants, power houses etc. the agreements specifically provide for a variation of price depending on quality of supplies. In all such cases claims for compensation in terms of the agreements in force are accepted. In other cases the complaints are investigated and remedial action taken as far as possible.

7.46. The Department has also stated that the Coal Mines Authority is proposing to have quality control department in the other Divisions also on more or less similar lines as in the case of the Central Division.

7.47. As regards coal mines under B.C.C.L. the Department has clarified that Bharat Coking Coal Ltd. take all care to load the coal of the right quality to various consumers. There is a full fledged quality control Department to ensure proper loading and this Department is being expanded to further improve the quality of loading also.

7.48. The representative of the Ministry of Irrigation and Power stated during evidence that there was a general complaint regarding extraneous material in the coal supplied to the power stations and the ash content was also higher than what was normally specified. Asked about the permissible percentage of ash content in coal consumed by the power stations, the witness stated:—

> "We have been able to burn upto 35 to 40 per cent ash-content coal provided the ash is what you call inherent in the coal and no extraneous material comes along with the coal. Our main worry is with reference to the extraneous material."

7.49. Elaborating the point further, the witness stated:—

> "Extraneous material comes in the mining process and they have to pick out the shale and throw it away. The stone

or shale cannot be distinguished from the coal as they get coated with coal dust and look black like coal. Experienced people are required to pick out the shale and stone. In the process of using coal in the power stations, we pulverise it into dust and in this process the grinding mills get damaged quite a bit if shale and stone are present in the coal. As a result of the break-down of the grinding mills, the power stations outages also occur. The breakdowns can therefore be attributed to the inferior quality of coal that we sometimes get. We are constantly on the job trying to see that the extraneous material coming with the coal is removed, wherever feasible."

7.50. Asked what steps were taken before and after nationalisation of coal mines for rejecting bad quality coal supplied to power stations, the representative of the Ministry of Irrigation and Power stated:—

"There is a clause in the agreements that if the quality does not conform to specification, we have a right to reject it. We have rejected it in some cases both before and after nationalisation."

7.51. Regarding quality of coal supplied to power stations the representative of the Department stated:—

"A very large quantity of coal is going to be consumed by the power sector in the coming years. So, there is need for a very good system of quality control in order that the power plants may work efficiently. It is not within the realm of practical possibility to introduce hand-picking when we are dealing with large quantities. The solution lies in systematic washing of coal. We expect that in the coming plan period this scheme of coal washing will be introduced in a greater measure.".

7.52. Asked about the permissible limit for ash content in the coal to be supplied to Power Stations, the Department has stated that "different parameters of permissible ash contents are applicable to different power houses. The requirements are primarily determined by the design specifications of the particular boilers. For example many of the old Power Houses are designed on superior and even selected grade coals, whereas most of the boilers designed recently can consume Grade-II/Grade-III or even ungraded coals, having ash

around 40 per cent or so. In the case of steel Plants, the Coking Coal to be consumed should have ash content less than 18 per cent."

7.53. The Department has further stated that "the quality of coal supplied to the power houses is ensured mainly by picking shales and other extraneous matter as far as practicable. However, picking operations have their own limitations especially where large quantities from open cast mines are involved and also where the general run of the coal in any particular patch being mined is of inferior quality. In the case of several Power Houses, there are arrangements for joint sampling and analysis of coal. In the case of coal supplies to Steel Plants, the quality is ensured by joint sampling and analysis of coal."

7.54. The Department has also clarified that supply of washed coal to Steel Plants is a normal feature but currently there is no scheme in operation to supply washed coal to Power Stations.

7.55. Regarding washing of non-coking coal the Fuel Policy Committee in their final Report has observed as follows:—

> "In future there will be need to wash even non-coking coal. As the washing of non-coking coal is a costly process, other means of improving the quality of coal like simple high specific gravity washing, hand-picking of better grades and proper sizing by screening etc. should be explored and the choice of beneficiation decided with due regard to consumer requirements, available grades of coal, the scale of the required operations etc."

7.56. The Committee note that the quality of coal is determined by grading of the coking and non-coking coals into various grades. The coking and blendable coals have been divided into nine grades viz., **Grade A, Grade B to H, and Grade HH. Similarly the non-coking coals in different regions have been classified into various grades, depending upon their ash content and the moisture content. The Committee regret to note that the coals of the Singareni and Assam coalfields have not been graded so far. They see no reason why the grading of coal in Singareni and Assam Coalfields should not have been done so long. The Committee recommend that the matter may be examined immediately and necessary action taken for grading of the coal from these fields.**

7.57. The Committee further note that the National Coal Development Corporation (now Central Division) has a technical cell attached to its Sales/Marketing Department which investigates the com-

plaints regarding inferior quality of coal from the consumers and takes remedial action. Arrangements are also made at N.C.D.C. collieries for regular sampling and analysis of coal supplied to the major consumers with a view to keep a watch on quality. The Coal Mines Authority is now proposing to have quality control departments in other Divisions on more or less similar lines as in the case of the Central Division. The Committee also note that the Bharat Coking Coal Ltd., has a full-fledged quality control Department to ensure that coal of right quality is supplied to the consumers. B.C.C. L. proposes to expand this Department to further improve the quality control measures.

7.58. The Committee would like the Coal Mines Authority to set up the quality control organisation in their various Divisions expeditiously so that coal of the right quality is supplied to various consumers and there are no complaints on that account.

7.59. In this connection the Committee would also like to draw specific attention to the following recommendations of the Committee on Public Undertakings in their Sixty-Seventh Report (Fourth Lok Sabha) for early implementation by the Coal Producing Organisations:—

"The Committee are of the view that top managements of public sector enterprises must regard quality control as an overall management function. They feel that the success of quality control depends to a large extent on the direct interest taken by the managements.

The Committee regret to note that some of the public enterprises e.g., Heavy Engineering Corporation Ltd. and National Coal Development Corporation Ltd. do not organise in plant training in quality control for their staff. They are of the opinion that training in the field of quality control will give the staff in the quality control organisation an understanding of the theory and practice of the quality control techniques and procedures. They recommend that all undertakings should evolve in plant training in quality control. The Committee are surprised to note that some of the public sector enterprises e.g. Heavy Engineering Corporation Ltd., had not prepared any Manual on Quality Control for the guidance of their staff. They are not sure whether they have any written instructions even. The Committee recommend that even undertakings which have issued detailed instructions on the subject of quality control from time to time should codify the same in the form of a Ma-

nual so that such instructions are available for study and reference at one place. Arrangements should also be made for inbuilt mechanism for periodical revision and review of the Quality Control Manuals.

The Committee recommend that every public undertaking should introduce a systematic procedure for registration of consumers' complaints and recording of the action taken on each complaint. Such a system would not only enable the undertakings to know the exact number of complaints received in a year but also serve as an index of the success of the quality control measures adopted by an undertaking and show the trend of consumers reaction to various products. The Committee recommend that all manufacturing units in the public sector should establish an adequate organisation and facilities for feed back on consumers reaction to their products by conducting field surveys through independent and experienced organisations like the Management Institutes in order to find out reaction of consumers regarding their products and to take necessary corrective steps promptly and adequately for rectifying defects etc., not only of the products sold but also of future production.

7.60. The Committee regret to note that there have been complaints by the power stations regarding the quality of coal supplied to them, particularly the existence of extraneous matter like shale and stone in coal which damaged the grinding mills in the power station and resulted in disrupting power supply to the consumers and higher maintenance costs to the power stations. The Committee would like to emphasise that very large quantities of coal would be consumed by power stations in the coming years and it is therefore imperative that they are supplied coal of the requisite quality by removing shales and stones therefrom. The Committee would like Government to evolve the best method for removal of shales and stones from the coal, whether by washing or by hand removal. In this connection the Committee would also refer to the recommendations made by the Fuel Policy Committee regarding the washing of non-coking coal and would urge Government to take necessary action to adopt the most economic method, after a full consideration of the techno-economic feasibility, so that coal of the requisite quality and quantity is supplied to the power stations and other consumers.

D. Price of Coal

7.61. The Department has stated that control over coal prices was

first introduced in 1944. Until then they were governed by the market conditions *viz.*, the normal force of supply and demand in the contemporary financial and economic circumstances. After introduction of control, prices were revised and notified by the Government from time to time to compensate the industry for the increases in wages arising out of Industrial Tribunal Awards of the agreements/conciliation proceedings with the workers. It was in 1957 that the Government appointed a Committee to examine the production cost of coal and coke and to recommend changes in the existing price structure. The Coal Price Revision Committee made a detailed examination of the cost of production of a large number of representative mines and recommended prices based on the overall average cost, the product mix and a desired return on investment for different grades of coal. The prices fixed by the Committee were accepted by Government.

7.62. The Department has further stated that control on the coal prices was withdrawn by the Government of India with effect from 24th July, 1967. After that date the prices of different grades of coal have been revised from time to time, based on the prices agreed to by the Railways who are the biggest consumers of coal produced. The prices agreed to from time to time with the Railways set the pattern for the purpose of charging from the other consumers also.

7.63. On the issue of pricing of coal the representative of Ministry of Irrigation and Power stated during evidence:

> "I would like to mention that so far as power stations are concerned, we are paying for the coal essentially for its heating value. My own feeling is that the present pricing is very old and unscientific. It was done by people who at that time wanted better grades of coal and started utilising the better grades while keeping the prices quite low for the same. For example, the Steel sector and the Railways want to use only Grade-I and Grade-II coals and at one time they were using grades even better than these. Steel plants need coking coal and not necessarily coal which is high in calorific value. The Railways use better grades because they cannot use inferior grades in their steam locos. Though the cost of raising a good grade or inferior grade of coal may be the same, it does not stand to reason that one should be asked to pay more or less the same price for the good and bad quality coals and particularly when the consumer has no choice in selecting the coal which will give him the maximum

calorific value for the price he pays. Supposing Grade-I is priced at Rs. 40 to 45 per tonne, the power station do not have the choice of using it even if they are prepared to pay the price. The power stations are asked in the interest of the nation to burn only the inferior quality coal with 40 per cent and above ash content and pay the price which is inconsistent with the quality. They are told that mining of even inferior quality would cost them as much. In the national interest therefore the power stations are asked to use the worst possible coal which even a brick-kiln will not touch and pay a price inconsistent with the quality. Again in the national interest the power stations are asked to burn the middlings. It would also be in the national interests if those who are using the better grades of coal are asked to pay a higher price than what they are paying today and the extra money thus collected from them is set aside to subsidise the lower quality coal being forced on the power stations. It will be unfair to give coal with 15 per cent to 16 per cent ash content, for example, to the Locos at a comparatively cheaper price and to give the worst possible coals at about the same price to the power stations. It is not only the price that matters as far as the Power Sector is concerned, the poor quality of coal has also been damaging the Boiler Plant and increasing the maintenance costs and affecting the power supply by the outages involved. All these result in extra cost to the Power Sector.

The high ash content of the coals being burnt by the Power Stations poses a major problem. For every million tonnes of coal, we are required to handle about 0.35 to 4.0 million tonnes of ash. This ash not only increases the wear and tear of the entire equipment but also creates the problem of its disposal and all this means extra cost to the Power Station. To say that we should suffer this in the national interests is not quite just. The present system of pricing is most unscientific and in the national interest we should really price the higher grades of coal much higher than at present and create a fund from which the low grade coals are subsidised and incentives are created for using the low quality coals. I feel this has got to be done as soon as possible.

7.64. On the question of pricing of coal the representative of the

Department stated that coal was a decontrolled commodity and the Government did not interfere with the price structure. The producer organisations and the consumers could negotiate the price.

7.65. In a note furnished by the Department it has been stated that the Committee on the Revision of Coal Prices appointed in January, 1974 submitted their Report in March, 1974 and after considering that Report, Government have agreed to allow the revision of the pit-head prices of different grades of coal and coke with effect from the 1st April, 1974. These prices will remain firm for one year from the date. As compared to the earlier prices, the revised prices show an average increase of Rs. 10 per tonne.

7.66 The Department has also stated that Government have decided that the prices of the different grades of coal should be related to the average useful heat value of the grade. The prices notified by the coal producing organisations with effect from 1st April, 1974 have been arrived at after taking into account the useful heat value of each grade of coal.

7.67. A statement showing the recommendations made by the Committee on revision of coal prices and the action taken|proposed to be taken by Government thereon is given at Appendix X.

7.68. The Committee note that control on coal prices which was first introduced in 1944 was withdrawn by Government with effect from 24th July, 1967. Since then, the prices of coal have been revised from time to time, based on the prices agreed to by the Railways who are the biggest consumers of coal. These prices set the pattern of prices to be charged from various other consumers.

7.69. The Committee consider that this system of pricing of coal is unscientific as the power stations are stated to have to pay more or less the same prices for coal, with 40 per cent ash content, as the steel plants and the Railways pay for good quality coal. The Committee regret to say that although in para 39 of their 33rd Report (Third Lok Sabha) on the then Ministry of Mines and Fuel, the Estimates Committee had recommended the grading of coal on its calorific value and fixing the prices accordingly, this was not implemented till April, 1974. It is only from April, 1974 that the prices of coal have been fixed after taking into account the useful heat value of each grade of coal. The Committee would like the Government to review the position in the light of experience gained of the working of the new prices and arrive at a scientific system of fixing of coal prices

according to its calorific value, in consultation with the major consumers.

E. Coal Dumps

7.70. It has been stated that "the establishment of coal dumps at suitable locations would help to meet the requirements of small consumers and reduce the pressure on wagons". In this connection, the Department has stated as under:

> "The Central Government have already approved the proposal to set up dumps at suitable locations all over the country, since this is expected to result in better turn round of wagons, which would ensure availability of coal to all the consumers and a rational and equitable distribution of the coal received. The details of the scheme are being worked out in consultation with the State Governments and the Ministry of Railways. One experimental dump of soft coke at Howrah is being operated by Coal Mines Authority. Many State Governments have accepted in principle the scheme of opening dumps. They have indicated the locations in which the dumps would be opened and also the names of the agencies which will operate the dumps."

7.71. In a subsequent note the Department has stated that "the coal dump scheme for distribution of coal and coke to small industries, brick kilns and domestic consumers has not been implemented so far as enough rail transport for the purpose has not become available. The outline of the scheme envisages that the coal for these categories of consumers would be moved in rakes from a single originating point to a single destination and consigned to an Agency nominated by the State Government. After unloading, the coal will be distributed to the actual consumers by Road Transport. The State Government would fix the retail price of coal taking into account the cost of transport, handling charges, dumps expenditure etc."

7.72. According to the latest information furnished by the Department, dumps have been set up at a few places in Uttar Pradesh namely, Lucknow, Varanasi and Gorakhpur. Suitable sites are being selected for opening dumps at Kanpur, Meerut and Agra.

7.73. Asked whether the Railways would provide any concession in freight for the movement of rake-loads of coal booked to the

coal dumps the Department has stated that "the Ministry of Railways have indicated that they would examine at the appropriate time whether the rebate of 2 per cent in freight which was being given by them when loading was done by the consigner at one point and to one consignee could be extended to the movement of coal in train loads for small-scale industries, domestic consumers etc., to be served by the coal dumps."

7.74. The Committee note that the Central Government had approved a scheme to set up coal dumps at suitable locations all over the country to ensure rational and a equitable distribution of coal and to achieve better turn round of wagons. The scheme envisages that distribution of coal and coke to small industries brick kilns and domestic consumers would be effected by moving coal in rakes from a single originating point to a single destination where coal would be received by an agency nominated by the State Government. The actual supplies of coal to the consumers will be made by road transport from the nearest coal dumps.

7.75. The Committee understand that so far coal dumps have been set up at a few centres in Uttar Pradesh, namely, Lucknow, Varanasi and Gorakhpur and suitable sites are being selected for opening dumps at Kanpur, Meerut and Agra. It has been stated that the coal dump scheme has not been implemented in other States as enough rail transport for the purpose has not become available.

7.76. The Committee regret to note that the scheme of setting up coal dumps has not been implemented in many States and Union Territories for want of sufficient rail transport excepting for a few dumps set up in Uttar Pradesh. The Committee consider that this scheme would be useful for easing the transport problem inasmuch as coal can be moved to the dumps in block rakes during the slack season of rail transport. Further under this scheme, there is immense scope for advance planning and coordination between the coal producers, the transport agencies and the State Governments to ensure availability of coal in sufficient quantity and its rational and equitable distribution to the consumers. It need hardly be emphasised that for successful implementation of this scheme, the recommendations made by this Committee in the earlier portions of this Report regarding precise assessment of demands and evolving a suitable distribution system, should be implemented effectively. It is also of utmost importance that concerted measures are taken to provide rail transport for moving coal to the dumps expeditiously. Moreover

the feasibility of using coastal shipping and inland waterways to the extent possible, should also be actively explored for implementation of this scheme.

7.77. The Committee would like particular care to be taken to ensure that coal of different grades and quality is properly segregated and that the consumers actually get the type of coal required by them. A careful assessment should be made of the working of dumps to see whether the creation of dumps has resulted in easy availability of coal to the consumers, avoidance of waste and pilferage, and economy in the cost involved. It is of the utmost importance that dumps are operated efficiently and economically, so that equitable distribution to the consumers is achieved and unduly high storage costs do not add to the burden of the consumer. The Committee would like to emphasise that sufficient stocks should be kept in difficult and inaccessible areas to meet the demands.

NEW DELHI;
December 18, 1974.
Agrahayana 27, 1896 (*Saka*).

R. K. SINHA,
Chairman,
Estimates Committee.

APPENDIX I

(*Vide* Para 3.23 of the Report)

Areas in which new coal mines are expected to be developed

1. *Assam*—Lodo.

2. *Eastern Division*—Area I—Madhukunda;

Area V—Nakrakonda;

Purshotampur and Jhanjra.

3. *Central Division*

(i) ORISSA AREA—(a) Areas North of South Balanda, (b) West Talcher, (c) Bharatpur.

(ii) SINGRAULI—(a) Singrauli-I, (b) Bina, (c) Singrauli V, (d) Singrauli-VI.

(iii) NORTH KARANPURA—(a) New Karkatta, (b) West Tumang, (c) Hesalong, (d) Lohri.

(iv) RAMGARH—(a) Sayal 'D' (U.G.), (b) Sayal 'D' (O.C.), (c) Balrampur.

(v) ARGADA—(a) Argada, (b) Naditoli, (c) Ramgarh-I and II, (d) Pundi (U.G.), (e) Pundi (O.B.), (f) Taping.

(vi) KARGALI—(a) Giridih, (b) Karo Special, (c) Karo Inferior.

(vii) KATHARA—(a) Uchitdih, (b) Asnapani, (c) Govindpur.

4. *Western*

(i) CHANDA—(a) Ballarpur Extn., (b) Rajur New, (c) Warore, (d) Durgapur, (e) Area North West of Durgapur.

(ii) NAGPUR—(a) Bina, (b) Patansaongi, (c) West Umrer, (d) Shobapur, (e) Pathakhera IV.

(iii) PENCH—(a) West Rawanwara, (b) Jamkunda, (c) Nandan (Damua).

(iv) KORBA—(a) Kusunda-I, (b) Kusunda-II, (c) Kusunda-III, (d) Amba, (e) Korba-Deepa Shaft, (f) Ib Seam in Hingir Rampur, (g) Ib Seam.

(v) SOHAGPUR—(a) Dhupuri, (b) Umaria.

(vi) BAIKUNTHPUR—(a) Bhatgaon, (b) Katpona-II, (c) Jhagarkand-Buk Buka, (d) Rajnagar Extn., (e) Area South of Ram Nagar.

The Bharat Coking Coal Ltd. has tentatively envisaged opening of 10 new mines mainly in the virgin blocks of the following sectors:—

1. Sitnala
2. Standard
3. Harriladi
4. New Sinidih
5. Madhuband
6. Suderardih
7. Mohuda
8. Chanch
9. South Begunia
10. Talgaria.

APPENDIX II

(*Vide* para 3.29 of the Report)

Trend of Coal production during 1974-75

(Provisional figures)

(in thousand tonnes)

	B.C.C.L.		C.M.A.		SINGARENI		TISCO/ IISCO etc.		TOTAL	
	1973	1974	1973	1974	1973	1974	1973	1974	1973	1974
April	1397	1292	4243	4584	421	389	199	220	6260	6485
May	1401	1377	4449	4825	438	393	198	230	6486	8825
June	1383	1325	4283	4624	432	465	205	230	6303	6644
July	1397	1369	4270	4803	475	528	209	250	6351	6950
August	1401	1356	4293	4733	457	523	227	240	6378	6852
September	1325	1435	4135	4736	440	531	220	240	6120	6942
October	1124	1283	3786	4749	409	533	200	240	5519	6805
November	1305	1381	4470	5060	450	503	230	250	6455	7194
TOTAL	10733	10818	33929	38113	3522	3865	1688	1900	49872	54697

SUMMARY

Organisation	1973-74	Production of coal during April-November 1973	Production of coal during April-Nov. 1974	Increase
C.M.A.L.	53460	33939	28113	4184
B.C.C.L.	16340	10733	10818	85
S.C.C.L.	5310	3522	3865	343
TISCO/IISCO etc.	2750	1688	1900	212
TOTAL	77870	49872	54696	4824

APPENDIX III

(*Vide* Para 4.6 of the Report)

A note regarding the High Level Standing Committee constituted in August, 1973 to look into the problems of coal transportation and distribution indicating the decisions made by the Committee and the action taken thereon.

The High Level Standing Committee consists of the Deputy Minister of Steel and Mines as Chairman and representatives of the Departments of Mines and Steel, Railway Board and the Coal Producing Organisations and a Member of the N.C.S.T. The terms of reference of the Committee included the review of the arrangements for coal loading and transportation, examination of the system of distribution of coal and making recommendations for improving the transport and distribution of coal in the short-term as well as in the long-term. The Committee held three meetings. A statement showing the important decisions of the Committee and the action taken thereon is given below:—

Decision	*Action Taken*
1. The level of loading of coal to the following categories of consumers should be stepped up as below :	The Railways are making efforts to increase the availability of wagons for all these consumers. During the last few months, the availability of wagons has improved. In August, 1974, the loading for Steel was 2196 wagons per day. Hard coke loading averaged 258 wagons per day. Soft coke and brick burning were however at the level of 130 wagons per day and 107 wagons per day respectively.
(a) Steel and Washeries. 2600 wagons per day.	
(b) Soft Coke 300 wagons per day.	
(c) Brick burning 200 wagons per day.	
d) Small Scale industries. 300 wagons per day.	
2. Monitoring Cell should be set up in Calcutta to deal with the difficulties in day-to-day movement of coal.	The Monitoring Cell has been set up and is functioning.
3. A Committee was appointed to reduce the detention time of wagons within the steel plants, washeries and mines.	The Committee has submitted its report. Action is being taken by the Railways and Department of Steel.

	Decision	*Action Taken*
4.	Every effort should be made to meet the requirements of power stations, cement and other major industries in full.	Efforts in this regard are being taken.
5.	The production of soft coke should be raised to 3·5 lakh tonnes per month as early as possible.	The C.M.A. and B.C.C.L. have programmed to attain this level of production.
6.	As far as possible short distance movement of soft coke to destinations in West Bengal and Bihar will be made by road while long distance movement will be by rail.	Action is being taken on these lines.
7.	B.C.C.L. should produce more soft coke from Kusunda and Patherdih areas.	4,000 tonnes more of soft coke has been produced from these areas. Considerable realignment has to be made before stepping up the production further.
8.	The Scheme for the establishment of coal dumps should be implemented as early as possible.	Coal dumps have been opened at 4 centres in U.P. It is proposed to establish more dumps in West Bengal, Bihar, U.P. and Punjab.
9.	The possibility of transporting a part of the coal requirement of the Bokaro Steel Plant by road should be examined.	A part of the coal requirement of Bokaro is now moving by road.
10.	The Ministry of Shipping and Transport should explore the possibility of transporting coal by inland waterways and get a scheme prepared in this regard.	A preliminary study has been made and it is now proposed to prepare a scheme, for the transport of 2 million tonnes of coal from the Rajmahal coal field by the river route.
11.	The Ministry of Shipping and Transport will take steps to increase coastal movement of coal.	The movement of coal by coastal steamer has increased during 1974-75. It is expected that about 1 m. t. of coal would be moved by this route this year.
12.	The Ministry of Shipping and Transport will assist cement factories and power stations authorities to charter foreign vessels.	Chartering of upto 4 foreign vessels for a period of 6 months has been agreed to.
13.	The facilities for loading of coal at Calcutta port should be improved.	The matter is being pursued with the concerned authorities.
14.	The requirement of wagons in each coal field monthwise should be worked out and intimated to the Railways.	This has been done.
15.	The movement of medium coking coal from Dumua and Kali Chappar collieries in M.P. to Bhilai Steel Plant should be taken up.	This has been done. Coal is now moving from these collieries to Bhilai.

APPENDIX IV

(*Vide* para 4.63 of the Report)

According to the data furnished by the Ministry of Irrigation and Power the following Thermal Power Stations were facing shortages of coal during 1973:—

(a) Punjab	(i) *Bhakra Nangal :* The Thermal Power Station was closed on 12-4-1972 due to shortage of coal. Its requirements of coal is about 2200 tonnes per month. As against this, the power station authorities have received only 85272 and 1560 tonnes of coal during January, February, and March, 1973, respectively. As a result the coal stock depleted from 4330 m. t. as on 1-1-73 to 1314 m. t. as on 1-4-73. Further during the third week of April the power station coal stock touched a dangerously low level.
(b) Haryana . . .	(i) *Surajpur :* Thermal Power station was stopped on 1-2-72 due to nil stocks of coal. Its monthly coal requirement is about 3250 m. t. per month. Due to acute shortage of Power in Haryana, this power station has been called upon to generate maximum power to meet the power crisis and as such its monthly consumption has touched 3230 m. t. during March, 1973 as against an average monthly coal consumption of 1250 m. t. during 1972. The Power Station received 1855, 1630, 1810 m. t. during January, February and March months respectively. The Power Station authorities have reported that Surajpur Power House was closed down twice in February, 1973 for want of coal.
(c) Tamil Nadu . . .	(i) *Ennore :* Its present monthly coal requirement is about 110000 m. t. and its monthly requirement will go up to 150000 m. t. when the 4th Unit (110MW) also starts running on continuous operation. The power station's real requirement is to be met from Singareni Collieries. During January, February and March, 1973, the Power Station received 23414, 37607 and 41738 m. t. of coal respectively. In addition to coal, the Power Station is consuming about 7000 tonnes of Fuel Oil per month to keep up the normal power generation. The Power Station is likely to step up generation to the maximum extent if adequate coal is supplied. The Power Station's coal stocks at present have been hand to mouth.
	(ii) *Basin Bridge* : The Power Station's coal requir e-ment is about 34000 m. t. The Power Station is receiving coal from Singareni, Talcher, CTC and Bengal-Bihar coalfields. During January, February and March, 1973, the Power Station received 11576, 11811 & 21642 m. t. of coal respectively. To maintain normal Power generation, about 8000 tonnes of fuel oil also is being consumed at this Power Station.

(d) Uttar Pradesh . . (i) *Balrampur Thermal Power Station :* Its monthly coal requirement is of the order of 1500 m. t. and coal is being received from Bengal Bihar coalfields. The Railway siding at Power Station is capable of only to accommodate 15 M.G. wagons at a time and hence coal is to be supplied at a rate of 15 wagons per day. During January, February and March, 1973, the coal receipts at the Power Station are 1009, 600 and 962 m. t. respectively. Balrampur Power Station was closed down three times during the period of January to March, 1973 for want of coal. It also remained partially closed in 1972 from 25-1-72 to 3-2-72. Again on 8th April, 1973, it was closed down for insufficiency of coal.

(ii) *Gorakhpur :* The Power Station had to resort to reduce generation for some time during 1972 due to shortage of coal.

(iii) *Chandausi :* The Power Station remained partially closed from 30-1-72 to 8-2-72 for want of coal.

(e) Ahmedabad . . . (i) The Power Station authorities telegraphically informed on 15-4-72 that ground stock on date was nil and oil stocks were dangerously low and they will have to resort to load shedding from 15-4-72. In the city of Ahmedabad, they resorted to load shedding on 15-4-72 due to practically nil coal stocks.

(ii) *Utran :* This Thermal Power Station is running on coal and gas and its monthly coal requirement is about 2500 m.t. As this Power Station can use gas as an alternative fuel to coal, there was no shortage of generation of Power due to non-availability of coal. However, the supply of coal to Utran Power Station is not satisfactory and it had no stock at the end of October, November and December, 1972 months. Only 196 m. t. of coal received in October, 1972 and 1500 m. t. of coal during each of November to February, 1973 months and consumed whatever coal was received during November and December, 1972.

(iii) *Porbander* : Its monthly coal requirement is about 14000 m. t. As against this, the power station received coal as given below during each month of :
September, 1972—6960 m. t.
October, 1972—9983 m. t.
November, 1972—8376 m. t.
December, 1972—15087 m. t.
January, 1973—10542 m. t.
February, 1973—9766 m. t.
March, 1973—14704 m. t.

The Power Station authorities have reported partial closure of this Power Station for want of coal once during the last week of February, 1973.

(iv) *Shapur* : Due to acute shortage of Power in Gujarat State, the *Shapur Power Station* has been asked to generate maximum power and hence its coal consumption has gone upto about 6000 to 7500 m. t. per month. Whereas the supply of coal is not in accordance with its requirement and as a

result coal stock at this power station has touched dangerously low level many times. The Power Station received 4899 and 3567 M.T. of coal during January and February, 1973, respectively, as against 10200 M.T. of coal per month, sponsored for movement. The Power Station authorities have reported partial closure of the Station for want of coal once during the last week of February, 1972 and again during the third week of March, 1973.

(f) Rajasthan : . . . (i) *Alwar* : Monthly coal requirement of Alwar Power Station is 1000 M.T. This Power Station was closed down once during third week of February, 1973 and again during the second week of April, 1973.

(ii) *Jaipur* : Due to acute Power famine in Rajasthan Jaipur Power Station has been called upon to step up its Power generation to meet the Power crisis and as such its coal consumption has touched 4340 M.T. in January, 1973 as against an average monthly coal consumption of 1500 M.T. during 1972. Coal received during February and March, 1972 is 1952 and 1812 M.T. respectively. As a result, the Power Station's coal stock became critical from the last week of March, 1973 and it was once closed down on 26th March, 1973.

(iii) *Bharatpur* : Telegraphic information was received from Bharatpur Power Station about closure of Power House from 19th April, 1973, for want of coal. Monthly coal requirements of this Power Station is about 1800 M.T.

(iv) *Jodhpur* : Power Station authorities received instructions from RSEB to step up power generation to meet the Power crisis in Rajasthan. Accordingly, Jodhpur Power Station generated more Power by consuming more coal. It consumed 2010, 2850 and 1400 M.T. during December 1972, January, 1973 and February, 1973 months respectively. Whereas the Power Stations received only 220, 1265 and 573 M.T. respectively during these months. As a result its coal stock became critical and it was closed down once during last week of February, 1973 and again closed down in the second week of March, 1973.

(g) Maharashtra : . . (i) *Trombay* : Coal and oil are being used as fuel for generation of Power at this Power Station. The present requirements of coal and oil are as given below -

Coal—40000 M.T. per month

Oil—33500 M.T. per month.

As against this monthly coal requirement, the Power Station received on an average about 20000 M. T. per month during the year 1972-73. But as both coal and oil are being used, generation of power was not affected at this Power Station. However, efforts made for supply of coal at the rate 40000 M. T. per month did not come true due to short supply of wagons.

(ii) *Parli* : This Power Station's monthly coal requirement is 25000 M. T. and it is receiving coal from Singareni Colleries. As against this monthly coal re-

quirement receipts of coal is as given below during the last six months:——

October, 1972—16878 M. T.
November, 1972—18605 M. T.
December, 1972—17791 M. T.
January, 1973—21542 M. T.
February, 1973—21353 M. T.
March, 1973—20734 M. T.

According to the Power Station authorities, they could have generated more power had they been supplied more coal.

(iii) *Nasik*: One Unit of 140 M. W. was closed down on 26th March, 1973 for insufficient stock of coal and restarted on 27th March, 1973 at this Power Station. Again one Unit was closed down on 28th March, 1973 and continued to remain shut down till 31st March, 1973.

(iv) *Paras* : Telgraphic information was received from Paras Power Station on 25th January, 1973 about using of coal from Bunker, due to nil ground balance of coal. Stock position of coal remained critical at this Power Station during subsequent months due to increase in coal-consumption for generating more power. The Power Station authorities had to slash down generation for insufficient stock of coal on 4th April 1973.

(v) *Bushaval* : As against a monthly coal requirement of 30000 M. T., during March, 1973, the Power Station received only 16079 M. T. and its coal stock position became critical .

APPENDIX V

(*vide* Para 4.91 of the Report)

A note on Gobar Gas Scheme

The programme for setting up of Gobar Gas Plants is being undertaken by the Ministry of Agriculture. They have proposed to instal 1-lakh Gobar Gas Plants during the Fifth Plan period of which 20,000 plants are programmed for 1974-75. A subsidy of 25 per cent is being proposed for the first 20,000 plants. The nationalised Banks have agreed to finance the farmers for setting up of these plants.

2. The gobar gas plant works on the simple principle that when during is fermented in anaerobic conditions *i.e.* in the absence of air, a combustible gas known as methane is produced. Fermentation is carried out in a digester of the sort of a well 2 meters in diameter and 4 meters deep. The well is filled with liquid slurry made by fixing equal quantities of dung and water. An iron drum 1:5 meters in diameter and 1:2 meters in height is then installed over the well to cut off the air supply and to collect the gas formed in the well. Production of gas normally starts within a week of the first feeding of required quantity of dung. When the gas collects in the iron drum, it begins to float and rise. The gas is led into the house by means of pipes connected to an opening on the top of the drum. The gas production is maintained by feeding the well daily with dung slurry through a pipe which carires it to the bottom of the well. The digested or spent slurry overflows from the top of the well and collected in a pit from where it can be periodically removed and added to the compost pit (The gas plant described above can be fed with the dung of any animal and also human excreta all of which yield methane gas on fermentation).

3. The programme for setting up of gobar gas plants has hithertofore been carried out mainly by the Khadi and Village Industries Commission. But the scope and extent of its activity has been only on a limited scale. (only 7,200 plants set up upto June, 74). This programme is now being taken up in a big way. It is targetted to set up 1,00,000 gobar gas plants during the Fifth Plan period in various States agroclimatically suited for the purpose.

4. To start with, the Ministry of Agriculture plan to take up a 'seeding programme' of setting up 20,000 gobar gas plants during the

year 1974-75 for which purpose the Ministry of Agriculture will give 25 per cent subsidy on capital cost. The remaining cost will be met by the beneficiaries. Loans for the purpose will be made available by the nationalised banks (at usual rate of interest). The 'seeding programme' will greatly help in demonstrating the quality of these plants and in creating awareness and inducement amongst the farmers. This will eventually lead to fulfilment of the plan target of 1,00,000 gobar gas plants.

5. The Khadi and Village Industries Commission have designed and standardised gobar gas plants of various capacities. These plant designs are being advocated by the Khadi and village Industries Commission. The Indian Agricultural Research Institute has also designed and standardised a gobar gas plant. Then there are other agencies namely P.A.R.I., Ramakrishna Mission etc. who have designed gobar gas plants suiting to local requirements. The agency taking upon itself the responsibility of installation of gobar gas plants will have the discretion to set up a gobar gas plant of any design found suitable under the local conditions taking into consideration also the preference of the beneficiaries for any particular design. All necessary facilities like grant of loan subsidy and supply of raw materials, will be extended irrespective of the design of the gobar gas plant set up by the agency. The raw material like cement and iron and steel will be supplied on controlled rate as far as possible. The present arrangement is that the raw materials required will be procured and stocked by the Khadi and Village Industries Commission for the plants set up by them.

6. The Khadi and Village Industries Commission have been carrying out the task of setting up of gobar gas plants in various parts of the country. They have been providing grant to the extent of Rs. 300|- per month and also servicing facilities through the State| District branches. But their sphere of work and its quantum has been limited for various reasons.

7. The Ministry of Agriculture have stated that since it might be difficult for the Khadi and Village Industries Commission which is at present doing this work to carry the development programme on the large scale now envisaged, it would be desirable that other agencies like the State Agro-Industries Corporations should also enter into the field.

APPENDIX VI

(*Vide* Para 5.37 of the Report)

A comprehensive note regarding the functioning and achievements of the Joint Monitoring Cell

The Joint Monitoring Cell was constituted as per the decision taken in the meeting held in the Cabinet Secretary's room on 12th July, 1973 and was set up in Calcutta with the representatives of Railways, Coal Mines Authority Limited, Bharat Coking Coal Limited with the aim of rationalising coal loading and coordianting the requirements of various consumers and to properly link them with different collieries taking into account the raisings and rail transport capacity for their movement etc., and also arrange for their proper distribution.

This Cell at Calcutta holds regular meetings as and when required to dicuss any problems regarding movement of coal from Bengal/Bihar and other outlying coalfields. For the efficient working of the Joint Cell, Coal Mines Authority Ltd., and Bharat Coking Coal Ltd., furnish information about consumers demand, net requirements of rail transport, actual availability of coal, colliery-wise and pilot-wise programmes, etc. On the basis of this information on day to day basis allotments are organised by the Director Rail Movement. The Cell also looks into the problems like rationalisation of coal loading and movement of coal.

This Cell did very effective work during the difficult period of rail transportation between August, 1973 and May, 1974 when there were coal production problems in Raniganj field and the loading and movement was greatly effected due to series of staff agitation after August '73 culminating in the All India railwaymen's strike in May, 1974. The coal loading had picked up since then. As against an average daily loading of 7392 wagons between August, '73 and May, 1974 the average daily coal loadings since June, 1974 has been as follows:—

June 1974	8060 wagons
July 1974	8090 wagons
August 1974	8223 wagons
September 1974	8493 wagons

APPENDIX VII

(*Vide* para 6·7 of the Report)

Washery	Rated coal capacity per annum (m. tonnes)	1971-72 Raw coal input (m.t.)	1971-72 %age to rated capacity	1972-73 Raw coal in put (m. t.)	1972-73 %age to rated capacity	1973-74 (1st 7 months) Raw coal input (m. t.)	1973-74 (1st 7 months) %age to rated capacity
PRIME							
1 Dugda—I	*2·4	0·867	36·1%	0·821	34·2%	0·459	32·8%
2 Dugda—II	2·4	1·166	48·6%	1·169	48·7%	0·506	36·2%
3 Bhoiudih	2·0	1·431	71·6%	1·483	74·2%	0·811	69·5%
4 Patherdih	2·0	1·119	55·9%	1·048	52·4%	0·576	49·4%
5 Durgapur (HSL)	1·50	0·781	52·1%	0·529	35·3%	0·394	45%
6 Durgapur (DPL)	1·25	N.A.	..	0·185 *	15%	0·143	19·6%
7 Jamadoba	1·44	0·994	69%	1·321	91·7%	0·802	95·5%
8 Chasnala	2·50	0·517	20·7%	0·651	26·1%	0·480	3·3%
9 Lodna	0·40	0·381	95·3%	0·324	81%	0·164	72.9%
MEDIUM							
10 Kargali	2·72	2·088	76·9%	2·091	76·9%	1·180	74·4%
11 Kathara	3·00	0·4c6	13·5%	1·004	33·5%	0·677	38·7%
12 Swang	*1·00	0·225	22·6%	0·263	26·3%	0·189	32·4%
13 West Bokaro	0·57	0·348	61·1%	0·493	86·5%	0·289	86·9%
BLENDABLE							
14 Gidi	2·84	Not in operation now.					
*derated to 1·8 MT	26·02	10·323		11·382		6·670	

* At the time of factual verification the Dep. has stated the figure as '75 thus reducing the total to 25 77 million tonnes.

APPENDIX VIII

(*Vide* Para 6·7 of the Report)

Production Performance of Washeries

S. No.	Washery	Design capacity of Raw coal input per annum. (m. tonnes)	Annual rate of clean Coal production (at 100% load factor	Year	Actual clean coal production in '000 tonnes.	Percentage utilisation in terms of clean coal production.	Remarks
1	2	3	4	5	6	7	8
A.	*Coal Mines Authority Washeries*						
	(i) Kargali	2·72	1·90 M.T.	1970-71	1404	73·9%	Utilisation could have been better with availability of adequate No. of wagons and better off take-of middlings.
				1971-72	1464	77·0%	
				9172-73	1436	78·2%	
	(ii) Kathara	3·00	1·50	1970-71	184	12·3%	Low utilisation percentage due to reluctance of Steel Plants for using this coal.
				1971-72	206	13·7%	
				1972-73	577	38·5%	*Due to non availability of wagons in a regular manner and other interruptions.
	(iii) Sawang	0·75	0·50MT.	1970-71	128	25·6%	Low percentage of utilistion due (i) no firm linkage of Sinks and (ii) non-availability of adequate number of wagons.
				1971-72	157	31·4%	
				1972-73	182	36·4%	
	(iv) Gidi	2·84	1·80MT				This washery was commissioned at the end of 1970, but for want of market it is remaining idle since March, 1971.

1	2	3	4	5	6	7	8
B	*Bharat Coking Coal washeries*						
	(i) Dugda I	1·8	1·26	1970-71 1971-72 1972-73	506 647 610	40·1% 51·3% 48.4%	The declining trend of raw coal feed to Dugda—I washery is due to Railways, inability to supply required quantity of raw coal in open 4 wheeler wagons for which the washery is designed. To overcome this difficulty a tippler capable of handling Box wagons is being installed.
	(ii) Dugda II	2·4	1·20	1970-71 1971-72 1972-73	915 785 779	76·3% 65·4% 64·0%	
	(iii) Bhojudih	2·00	1·4	1970-71 1971-72 1972-73	1267 1274 1305	90·5% 91·0% 93·2%	
	(iv) Patherdih	2·00	1·3	1970-71 1971-72 1972-73	784 789 758	60·3% 60·7% 58.3%	Production in Bharat Coking Coal washeries during 1972-73 was low for the following reasons : 1. Power interruptions. 2. Short/erratic supply of box empties and also short supply of raw coal to Bhojudih washery occasionally. 3. Railways, inability to move the required quantities of raw coal to Dugda—1 washery in suitable type of wagons for which the washery is designed.

APPENDIX IX

(*vide* para 6.9 of the Report)

Statement showing the capital investment and year of commissioning of the Washeries.

		Name of washery and year of commissioning	Capital investment
			(Rs. million)
(Private Sector)	1	W. Bokaro (1951)	N.A.
-do-	2	Jamadoba (1952)	18·0
	3	Lodha (1955)	1·2
	4	Kargali (1958—1966)	45·8
	5	Durgapur (H.S. L.—1960)	15·0
	6	Dugda—I (1961)	47·5
	7	Bhojudih (1962—64)	42·5
	8	Patherdih (1964)	44·5
	9	Durgapur(DPL) (1957)	31·7
	10	Dugda—II (1968)	68·5
(Private Sector)	11	Chasnala(1968-69)	N.A.
	12	Kathara (1969)	122·6
	13	Sawang (1970)	44·0
	14	Gidi (1970)	98·0

Note:—Washeries other than those shown as Private Sector fall in the public sector.

APPENDIX X

(*Vide* para 7.67 of the Report)

A statement showing the recommendations made by the Committee on revision of coal prices and the action taken/proposed to be taken thereon.

Recommendation of the Coal Price Committee	Decision of the Government
(i) The proposed prices are expected to provide for ten per cent return on capital employed after meeting fully the expected costs of all the three enterprises for 1974-75	It was decided that no return be provided in the price structure for the equity portion of the capital so as to keep the price increase as low as possible.
(ii) The suggested prices will be firm for one year from 1·4·74 to 31·3·75	Accepted.
(iii) The same type of coal produced in C. M. A. and B. C. C. will command the same prices. It is left to CMA to decide whether the proposed prices should be also extended to the raisings form the linked mines of withstanding their existing contracts. For Assam coal the R. O. M. price applicable to Gr. I of H. M. is be recommended.	Accepted.
(iv) The proposed gradewise prices for slack coal enumerated in para 9 envisages removal of 50% of imbalances between their existing prices relationship, and the inter-relation of their heat values.	The gradewise prices structure approved by Government ovudes fir 100/ removeal of imbalance.
(v) A premium of Rs. 1·25 per tonne would be allowed for the steam coal over the prices of the corresponding grades of slack coal.	Accepted.

APPENDIX XI

Statement showing summary of Recommendations/conclusions

S. No.	Reference to Para No. of the Report.	Summary of Recommendations/ Conclusions.
1	2	3
1	1.25	The Committee note that with the nationalisation of the coking coal mines on 1.5.1972 and the non-coking coal mines on 1.5.1973 all the coal mines in the country except the captive mines of the private sector steel plants are under Government control and management to facilitate coordinated, rational and scientific development of the coal resources of the country. The management of 214 coking coal mines and 12 coke oven plants has been vested in the Bharat Coking Coal Ltd., a Government Company, which is functioning as a subsidiary of the Steel Authority of India Ltd. The management of 711 non-coking coal mines, is vested in the Coal Mines Authority Ltd., a Government Company, which also holds Central Government shares in the Singareni Collieries Ltd. The existing National Coal Development Corporation Ltd., is also its subsidiary. The Committee also note that for administrative convenience, 184 fragmented non-coking coal mines have been brought under the management of Bharat Coking Coal Ltd. Both the Companies are responsible for the entire gamut of functions in relation to the coal mines coming under their control, mainly production, distribution and sales, conservation, safety, development, planning and scientific utilisation of coal resources etc. Moreover, under the Coal Mines (Conservation and Development) Act, 1974 the Coal Board which is responsible for the

1	2	3
		promotion of measures for safety in coal mines and conservation and development of coal resources is being dissolved and the control assumed by the Central Government through the two Government Companies.
	1.26	The Committee consider that nationalisation of coal mines is an epoch making step and marks a new era for the development of coal mining in the country in the overall interest of the nation. Coal is the most important and crucial indigenous source of energy. It is a national asset on which the manufacturing industries and economic expansion of the country largely depend. Basic industries like iron and steel depend on coal. A large part of power generation is coal-based. Construction inputs such as cement and bricks require coal. The present oil crisis has further underlined the importance of coal and added a new urgency to the task of stepping up coal production rapidly. The Committee feel that nationalisation of coal mines has afforded not only new opportunities but also posed new challenges to the Government and management to meet the increasing requirements of coal in the coming years. Urgent attention is required to be given not only to ensure rational and coordinated development of coal production in the country but also to promote optimum utilisation of coal resources, consistent with the growing requirements of the country. Coal mines have to be reorganised and restructured and are to be worked on modern scientific lines by paying special regard to conservation and safety of mines and welfare of the workers.
	1.27	There is an urgent need for rapid step up in the production of coal in the country. The increased production of coal envisaged for 1978-79 will call for not only large scale investment

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but concerted organisational efforts by the Coal Mines Authority and Bharat Coking Coal Ltd. Suitable advance action is, therefore, to be initiated to meet the targets of increased production of coal during the 5th Plan period which is prerequisite for the achievements of planned targets in vital sectors such as power and transport etc., in the 5th Plan. Advance plans for future expansion have also to be drawn up. Other tasks which require to be attended to urgently by the management of nationalised mines, *inter-alia*, are:

(i) Evolving of a suitable managerial structure;

(ii) Strengthening of distribution system to serve the interests of both the producers and the consumers;

(iii) Elimination of malpractices;

(iv) Supplying of suitable quality of coal to consumers at reasonable prices; and

(v) Working out appropriate linkage between bulk consumers and coal fields as well as special arrangements for domestic consumers.

(vi) Streamlining of transport arrangements for movement of coal etc.

1.28 The Committee realise that these tasks are challenging but they can be overcome by far-sighted, sustained and dedicated efforts on the part of the management. The Committee would like to stress that nationalisation of coal mines would have a meaning only if the objectives behind nationalisation i.e., coordinated, rational and scientific development of coal industry in the country, massive and rapid increase in coal

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		production to meet the needs of consumers, conservation and optimum utilisation of coal reserves etc., are fulfilled.
2	2.4	The Committee note that the demands for coal by the end of Third Plan *viz.*, 1965-66 and by end of the Fourth Plan *viz.*, 1973-74, were assessed at @98.55 million tonnes and @100.19 million tonnes respectively, whereas the actual consumption was 67.20 million tonnes and 77.87 million tonnes respectively. The Committee are concerned to note that the shortfalls in consumption *vis-a-vis* assessed demands during the Third and Fourth Plans were of the order of 33 per cent and 21 per cent respectively.
	2.5	The Committee note that the assumptions underlying the assessment of demands have been based on the past trends of coal consumption, the availability of facilities for transport of coal, the latest available data regarding the consuming sectors, norms of coal consumption, time-lag in the units reaching the capacity, production programme etc. For sectors in which this method could not be adopted, an average rate of growth was assessed. In the opinion of the Committee, the wide gap between projections and performance calls for a critical and analytical review of the system of assessment of demands. The Committee consider that a sound system for collection and evaluation of data regarding demand is pivotal for fixing plan targets on a realistic basis. A critical study of the areas in which the basic assumptions were found to be wide off the mark would be very revealing and should be undertaken without delay so as to throw up objective lessons for realistic assessment of demand at least for the current plan period which has only commenced in April last.

@Production targets fixed at 97 m.t. in the Third Plan and 93.5 m.t. in the Fourth Plan.

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	2.10	The Committee note that according to the Secretary of the Ministry, the original assumptions of demand for coal did not materialise because of the shortfalls in the achievements of production targets by the major consuming industries whose demands for coal form a significant proportion of the total demands. The Committee further note that the growth rate in the industries sector which was assumed to be 7.7 per cent in the Fourth Plan, was not achieved. Against this, the actual growth rate has been 5 per cent in 1969-70, 1.8 per cent in 1970-71, 2.9 per cent in 1971-72 and 4.2 per cent in 1972-73. The Committee consider that while in some cases the 'cut back' in production of coal may be due to the lack of demand as emphasised by the Secretary of the Department this may not be true in respect of all sectors of industries where production may have fallen due to non-availability of coal. This again underlines the need for a more scientific system of assessment of likely demand for each major sector of industry so as to ensure that the demand estimates are as realistic as possible. The Committee consider that there is great scope for framing demand estimates more realistically in respect of major identifiable sectoral consumers like steel, thermal power stations, Railways, cement factories etc., which account for the bulk of the total demand for coal in the country. In this connection they feel that the problems, besetting the steel sector, where coal consumption was reduced by over 40 per cent of the original estimates, could have been well anticipated by closer statistical analysis. The Committee urge that a rational and scientific system should be evolved for assessment of demand for coal, based on modern methods of statistical analysis, integrating it with the actual and anticipated patterns of consumption, in all sectors of the eco-

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nomy so that wide variations between assessed demands and actual consumption are reduced to the minimum. Moreover there should be a system of continuous assessment of demands for coal, particularly for major industries so that advance action could be taken to adjust production and the requisite transport facilities with the likely demands for those industries.

2.19 The Committee note that against the assessed demand of 100.19 million tonnes of coal during 1973-74, the actual consumption during 1973-74 was 77.87 million tonnes—pointing to an over-assessment of demand by 22.32 million tonnes. The Committee further note that the shortfalls are attributed to decline in the demand as they actually materialised in sectors like steel and power. The Committee are, however, concerned to note that there is an atmosphere of scarcity of coal in certain other consuming sectors. In fact, the Secretary of the Ministry also admitted during evidence that availability of coal is far less in certain sectors because of gaps between production and availability at the consumer ends. The Committee are not convinced by the explanation that there was unexpected growth in the demand of power sector due to extreme drought conditions and increased demand of coal in preference to middlings which created constraints in the availability of coal to other sectors. In fact, the Committee find that against the assessed demand for coal for the power sector at 21.88 million tonnes at the end of the Fourth Plan, the estimated consumption in 1973-74 was only 19.50 million tonnes *i.e.*, a shortfall of 2.38 million tonnes. Since the actual consumption of coal by power stations was much less than the planned demand, the plea that there has been unexpected growth in the demand of power sector is not tenable.

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	2.20	The Committee have been informed that the main area of shortage was the domestic sector and that this shortage was likely to grow because of increase in demands caused by oil crisis.
	2.21	In addition, the Railways had also to discontinue temporarily some of the branch lines train services as steam coal had to be shared by them with some other important industries whose demands were going up.
	2.22	There was also lack of adequate supply of coal to the cement industry as would be seen from the observations contained in Paras 2.18 to 2.36 of the 60th Report of the Estimates Committee on "Availability and Distribution of Cement".
	2.23	It has, however, been admitted that the overall shortage of coal for 1973-74, taking into account all consuming sectors, was about 4-4½ million tonnes.
	2.24	The Committee consider that the reasons advanced by the Ministry, do not fully explain the paradox of shortfall in consumption of coal by certain sectors of industries as compared to the Plan target and lack of availability of coal to the tune of about 4½ million tonnes, in some other sectors. The Committee cannot help arriving at the conclusion that one of the basic factors for this state of affairs, is the lack of a sound system of collection and evaluation of data regarding demand estimates of the various sectors and their periodical review so as to plan and adjust production in time according to the demand of coal by these sectors. Had this been done, it should have been possible to arrange production of right type of coal to suit the particular requirements of these consumers and

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		arrange for its movement by advance planning. It appears that while the demands from some major sectors have been over-pitched, the demands from sectors like small industries, brick-kilns and domestic consumers etc., have been assessed only on *ad hoc* basis with the result that overall assessment of demand for coal was over-estimated in some sectors and under-estimated in other sectors. As has been pointed out in a subsequent section, there was no specific machinery to assess the demand of coal in respect of hard coke, soft coke and requirements of the small scale industries, brick kiln industries etc., falling under the purview of the State Government.
	2.25	The Committee recommend that in the light of experience gained, Government should devise a system of scientific assessment of demand, in close coordination among all agencies concerned *viz.*, coal mining, major consumers, transport etc. taking into account foreseeable developments in the various sectors. The intention is that the supply of coal should always be a little ahead of requirements and that, in no case, a climate of scarcity should be allowed to be developed, leading to various difficulties.
3	2.44	The Committee note that the Draft Fifth Five Year Plan has tentatively projected a coal demand of 135 million tonnes by 1978-79. The Fuel Policy Committee, in their final report which was submitted in August, 1974, after taking into account interfuel substitution possibilities, has however estimated the demand for coal between 135 million tonnes to 145.8 million tonnes in 1978-79. In the light of energy crisis, the Department has now submitted a revised programme for 145 million tonnes of coal for the Fifth Five Year Plan. The Planning Commission which had also appointed a number of

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		Working Groups to study the feasibility of reduction of consumption of oil products and their substitution by coal, is examining the Reports of the Working Groups and the additional requirements of coal during the Fifth Five Year Plan.
	2.45	The Committee recognise that Government is taking steps to reassess the demand of coal, in view of the energy crisis. They would, however, like to stress that the demand for coal of the various sectors during the Fifth Plan, should be reassessed realistically on a rational and scientific basis, keeping in view the increased requirements, as a result of the change over of the various industrial consumers from oil to coal. They have, no doubt, that under the present circumstances, the demand for various types of coal would increase considerably which has to be catered for.
	2.46	The Committee further consider that planning for a basic energy source like Coal, should be for sufficiency and not for scarcity and should therefore meet fully the needs of the various industries and other consumers so as to avoid scarcity conditions which act as a constraint to the stepping up of production. The Committee would also like the Government to devise a suitable mechanism to keep a watch over the demand for coal of the various consumers so that timely adjustments in coal production and supply could be made to meet the fluctuations in demand of these consumers.
4	2.47	The Committee would further urge that coal requirements for the Sixth Plan should also be broadly kept in view as a long gestation period is required for completion and commissioning of coal mining projects.

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5	2.48	The Committee note that in the forecast made by the Fuel Policy Committee the assumptions of demands of raw coal for brick kilns and soft coke for domestic consumption are 8 million tonnes for brick kilns and 9 to 10.6 million tonnes for soft coke. The Committee would urge that an examination in depth of these demands may be made to see whether these demands need to be revised upward in the context of increasing requirements of bricks for house building and other construction works and the extensive scope for use of soft coke, in view of oil crisis.
6	2.58	The Committee note that about 80 per cent to 85 per cent of the demands for coal falling in the sector of the State Governments is directly assessed by the Central Government in consultation with the State Governments and the Electricity Boards. For areas of demands such as soft coke, brick kilns and Small Scale Industries, exact assessment of demands has not been made and a rate of growth of 6 per cent per annum has been assumed in the Fifth Five Year Plan for assessing the demands in respect of such consumers. Regarding Hard Coke, the position is no better. Most of the State Governments do not have the requisite machinery to assess precisely the demand for hard coke for units falling in the State Sector with the result that the demands were inflated and unrealistic.
	2.59	The Committee understand that the Coal Controller has been asked to conduct in consultation with the State Governments, demand survey of the requirements of small scale industries, brick kilns and domestic consumers and that it was contemplated to make the State Governments responsible to assess and consolidate the requirements of such consumers

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		and also the requirements of hard coke and to arrange for equitable distribution to them. The Committee have been informed that the State Governments have been addressed in the matter and that replies are awaited from the State Governments. The Committee note with concern the leisurely progress in finalisation of this important matter. The Committee also note that a Committee which was appointed to assess the requirements of Hard Coke has fixed quotas for consumption for each State after on-the-sport discussion with all State Government agencies. The Committee feel that *ad hoc* fixation of quotas by a Committee of the nature is not likely to serve the purpose and that the assessment of demands should be based on a scientific system that should be devised and implemented by the States themselves. The data collected by the Committee on Hard Coke can provide useful yardsticks against overpitching of demands.
	2.60	The Committee urge that a rational and scientific procedure for assessment of demands of coal for brick kilns, small scale industries, domestic consumers and for hard coke be laid down and implemented, making the State Governments responsible for determining the actual requirements in their Sector. For this purpose it would be desirable that the necessary guidelines are laid down by the Centre and a standard proforma for collection of requisite information is devised and circulated to the State Governments.
7	3.31	The Committee note that during the Second Plan period, against the target of 60 million tonnes, the actual production of coal in 1960-61 was 54.62 million tonnes. During the Third Plan, against the target of 97 million tonnes (revised during the Mid-term Appraisal to 89.9

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million tonnes) the actual production amounted to only 67.72 million tonnes. Even during the Fourth Plan, the production of coal reached only 77.9 million tonnes, against the target of 93.5 million tonnes. The production of coal has thus lagged behind the targets by 5.4 million tonnes, 22.2 million tonnes and 15.6 million tonnes respectively during the last three Plan periods.

3.32 The shortfall during the Third Plan has been attributed to shortfall in the demand of coal by the consuming sectors like the steel plants, thermal power stations, cement industry, Railways due to their electrification and dieselisation programme, and inadequate rail transport etc. The shortfall during the Fourth Plan is stated to be due to shortfall in the demand of important consumers like steel plants, inadequate rail transport since the last quarter of 1970, frequent power break downs and continuing power shortage in the Eastern region, shortage of explosives, unsettled law and order conditions in West Bengal during the earlier years of the Fourth Plan and inadequate investment and attention paid to sand stowing and other measures by private mine owners.

3.33 The Committee have already commented on the plea of shortfall in demand from important consumers during the Fourth Plan period in Chapter II of their Report (Paras 2.19 to 2.25) wherein they have drawn attention to the paradox of shortfall in consumption of coal by certain sectors of industries and lack of availability of coal to the tune of about 4½ million tonnes in some other sectors. In particular, the Committee have referred to large unsatisfied demands, in the cement industry, domestic sector and brick kiln industry etc. The Committee regret

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that during the Fourth Plan, the production of coal lagged behind the demand of the various consumers, by about 5 million tonnes resulting in widespread hardship to these sectors. The Committee urge that a study in depth should be made to analyse the reasons for shortfall in production so as to take effective remedial measures to prevent a recurrence of scarcity conditions in future.

3.34 The Committee note that production of coal which was 77.9 million tonnes during 1973-74 is tentatively planned to be increased to about 135 million tonnes by 1978-79. The production of coking coal is envisaged to be increased from 15.80 million tonnes in 1973-74 to 33.70 million tonnes in 1978-79 and of non-coking coal from 62.10 million tonnes in 1973-74 to 109.30 million tonnes in 1978-79. This target of coal production is likely to be revised upwards in the context of the present oil crisis. The Department of Coal has already submitted a revised production programme for 145 million tonnes by 1978-79 which is under examination by the Planning Commission. Thus an increase between 57 to 67 million tonnes in the production of coal is envisaged during the period of five years.

3.35 From the tentative estimates of year-wise production during the Fifth Five Year Plan, the Committee note that the percentage of annual estimated increase in production during each year from 1974-75 to 1978-79, over the preceding year, is of the order of 18.7, 9.7, 12.6, 13.5 and 10.4 respectively. The overall estimated increase in production in 1978-79, over the production in 1973-74, would be of the order of 86.4 per cent.

3.36 Power is an essential input and should be of increase in production of coal envisaged dur-

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		ing the Fifth Plan is stupendous and unprecedented and would call for a well-conceived strategy of short-term and long-term planning, coordinated efforts and mobilisation of all resources. The Committee are conscious that this enormous increase in coal production would put severe strains on the managerial and technological capability of the coal organisations engaged in coal raising. The Committee find that there are many constraints on coal production *viz.* power shortage, lack of modern machinery, unsatisfactory industrial relations and endemic law and order problems in the Bengal-Bihar coal-belt. The difficulties in the availability of mechanical equipment for coal mines, power shortage and rail transport have acted as a drag on increasing coal production. The Committee would like to emphasise that unless effective action is taken urgently to remedy these shortcomings, it would not be possible to achieve the targetted production. Modern mining methods, faster lifts and other mechanical devices would have to be employed more widely in the existing mines to increase their output.
	3.37	It is also imperative that apart from other measures, both the administrative and operational machinery in the Coal Mines Authority and the Bharat Coking Coal Ltd., is geared up to face the challenging tasks ahead. Immediate measures should be initiated and organisational mechanism should be built up to ensure full and effective coordination and support from power generating agencies and the Railways as this support is vital for securing substantial increases in coal production, planned during the Fifth Plan.
8	3.38	Power is an essential input and should be available without any interruption. There

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should also be matching transport facilities which should be a little ahead of requirements. It should be therefore ensured that the development of mines is synchronised with the availability of power and transport in adequate measure to secure the raising of required quantity of coal and its movement to the consuming centres. The Committee consider that since the coal mining, power generation, Coal Mining Machinery manufacturing organisations and transport organisations as well as the major consumers like steel plants, Thermal Power stations etc. are in the public sector it would be easier to forge effective coordination among all the concerned organisations so as to develop the requisite facilities to ensure the attainment of coal production targets for each year of the Fifth Plan.

3.39 The Committee note that 75 per cent of the additional production in the Fifth Plan, is envisaged from the re-organisation and expansion of the existing mines and 25 per cent from the new mines. According to the Report of the Task Force, underutilised capacity of about 18.5 million tonnes over the 1970-71 production level of 71.5 million tonnes, existed in the coal industry and the additional demand of upto 19 million tonnes can be met without going in for new projects. The Committee further note that the total number of new mines which are proposed to be brought in production by 1978-79 will be 55, consisting of 20 opencast mines and 35 underground mines, with anticipated output of 10.3 million tonnes and 8.06 million tonnes respectively.

3.40 The Committee would like to emphasise that advance action should be taken in order to ensure that the programmes in the coal sector are

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fulfilled according to the time schedule. The mines from which the additional production is to be achieved should be identified and all the new mines to be developed during the Fifth Plan should be demarcated and further action regarding drilling work etc., should be completed according to the detailed programme. The Committee would like to emphasis that development of new mines should be planned on the basis of regional requirements of coal as far as possible, so as to reduce the burden of transport on the Railways. The Committee need hardly emphasise that arrangements should be made to continuously monitor the progress in the implementation of the detailed programme so that there are no slippages and that remedial action, as necessary, can be taken without delay.

3.41 The Committee note that most of the increase in output is planned from the expansion of the existing mines. They consider that to achieve the increased targets of coal production at a quicker pace, due to energy crisis, the output from the existing mines should be substantially increased by improving productivity and by implementing modernisation schemes and introducing improved methods of working.

The Committee would like to stress that effective measures should be taken to ensure production of coal, most efficiently and economically. Consumers requirements regarding quality and timely supply of coal should be fully satisfied.

10 3.42 The Committee note that the production target for 1974-75 was fixed at 92 million tonnes in the Draft Fifth Five Year Plan which was increased to 95 million tonnes in the context of energy crisis. Against this target the production

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		during 1974-75 is expected to reach only 88 million tonnes i.e., a shortfall of about 4 million tonnes. The Committee are concerned to note that in the very first year of the Fifth Plan, there has been shortfall in achieving the production target fixed for the year. This, in itself, indicates that greater efforts and effective measures are required to fulfil the targets laid down for the Fifth Plan period.
11	3.43	The Committee note that new underground mines have gestation period of about 7 years while open cast mines take about 4 to 5 years, from planning to full production stage. The Committee would like the Central Mine Planning and Design Institute to initiate research and development activities to reduce the period of gestation of the new mines, both underground and open-cast.
12	3.44	The Committee further note that in the Report of the Task Force on Coal and Lignite for the Fifth Plan, the projected production of coking and blendable coal and non-coking coal by the end of 1978-79 from the various coalfields is as under:—

(Figures in m. tonnes)

	Bengal Bihar Coal-fileds		Outlying coal-fields		Total	
	Estimated Production 1978-79	Increase over 1973-74	Estimated Production 1978-79	Increase over 1973-74	Estimated Production 1978-79	Increase over 1973-74
Coking and blendable coal	34·41	17·14	·70	·32	35·11	17·46
Non Coking Coal	53·07	19·66	54·93	30·12	108·00	49·78
TOTAL	87·48	36·80	55·63	30·44	143·11	67·24

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		It would be seen that the increase in projected production of coal over 1973-74 level in the Bengal-Bihar coalfields, is of the order of 36.8 million tonnes and in Outlying coalfields, of the order of 30.44 million tonnes. The Committee recommend that a study in depth should be carried out, analysing the extent to which the projected increase in production of coal in Bengal-Bihar coalfields will affect the problem of transport logistics, considering the present inadequacy of transport in that region to meet even the current levels of supply. The Committee desire that the feasibility of maximising production in the Outlying coalfields by providing matching transport facilities so as to avoid bottlenecks in movement of this vital commodity, should be examined.
13	3.45	The Committee regret to note that annual targets of production of coal have not been indicated in the Draft Fifth Plan. They recommend that these targets should be laid down and published in the Plan documents to enable Parliament to keep a watch over their fulfilment. The Committee further recommend that apart from the annual targets of production from the various coalfields, the Coal Mining Organisations should also fix targets of production colliery-wise and month-wise and that a continuous watch should be kept on the attainment of these targets. The Committee would like that the targets of production and the actual achievement should be analysed periodically to locate bottlenecks and take effective remedial steps to arrest the declining trend. The annual targets fixed collierywise and the actual achievements should also be suitably published in the Annual Report of the Ministry.
14	3.59	The Committee note that programmes have been drawn up to increase the production of

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		coking coal from the present level of about 16 million tonnes to about 34 million tonnes by 1978-79 which represents more than double the present output. To achieve this objective, B.C.C.L. have entered into an agreement with M/S Kopex, a Polish firm for the preparation of a feasibility report for reconstruction and re-organisation of the Jharia coalfields. A preliminary report has been received from the firm which is being examined by B.C.C.L., and also a second agreement has been signed with M/s Kopex regarding project reports and technical studies. The Committee desire that the preparation of project reports and technical studies should be completed with expedition so that concrete measures are taken to achieve the targets projected.
15	3.60	The Committee note that 81 per cent of the collieries in Jharia are producing less than 1000 tonnes per day, whereas for a viable unit, the production should be a minimum of 3000 to 4000 tonnes per day. The Committee also note that for the efficient management of the coking coal mines, 214 Coking Coal Mines and 187 fragmented non-coking coal mines have been consolidated in 5 Areas, having 22 sub-areas, each under a General Manager and sub-Area Manager respectively. These 401 collieries have been merged into 87 units. The Committee also note that schemes of reorganisation, reconstruction and rationalisation of these mines are being initiated, aiming at a minimum production per unit of 3000 to 4000 tonnes per day. The Committee would urge that concrete measures should be taken to achieve the economies of scale in the production of coking coal from these coalfields so as to meet the requirements in full.
16	3.61	The Committee are concerned to note that there had been a certain amount of fall in the

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		production of coking coal after nationalisation of coking coal mines. This is attributed to the deteriorating law and order situation in Jharia area, short fall in the availability of power from the D.V.C. system and continued disruption in rail traffic. The Committee need hardly stress that coking coal is the back bone of the iron and steel industry and that there should be no slackening of efforts to step up the output of coking coal. It is essential that production of coking coal is stepped up so that the production of iron and steel is not hampered in any way at any time.
17	3.62	The Committee desire that necessary steps should be taken to ensure uninterrupted supply of power to the coalmines in Jharia so that there is no shortfall in production on this account. It is also important that industrial relations in the coal belt are improved to avoid disruption in coal production.
18	3.63	The Committee further suggest that advance action should be taken for linking programmes of coke production with the production programme of the steel plants and the requisite rail facilities for transport of coking coal assured. The Committee need hardly emphasise the importance of effective coordination among the three organisations so as to ensure that the production of iron and steel does not suffer for want of availability of coal.
19	3.66	The Committee note that the tentative target for non-coking coal in the Fifth Five Year Plan is 101 million tonnes by 1978-79 which means an increase of over 62 per cent over the present level. The Committee also note that out of 711 mines nationalised, 527 mines have been vested in the Coal Mines authority and the balance 184 of the Jharia Sector in the Bharat Coking Coal Ltd. and that the regular working mines under

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		Coal Mines Authority are 297. Regrouping of the mines has been done, keeping in view the principal geographical barriers, possibility of most economical exploitation of all the coal available in each unit etc.		
	3.67	The Committee expect that with the nationalisation of non-coking coal mines, the reorganisation and restructuring of these mines should have been greatly facilitated and should help in the achievement of objective of increased production of non-coking coal during the Fifth Plan period. The Committee in paras 3.36 to 3.43 have suggested various measures for achieving the targets of production of coal during the Fifth Five Year Plan. They hope that concrete action will be taken to implement these plans according to the time schelule laid therefor.		
20	3.71	The Committee note that the pit-head stocks of coal have declined from 9.58 million tonnes in 1970-71 to 5.97 million tonnes in 1972-73. During 1973-74 the pit-head stocks are stated to be 6.65 million tonnes only. While appreciating the views expressed by the representative of the Department that pit-head stocks of coal should be very much lower and more coal should be transferred to the centres of consumer demand, the Committee cannot lose sight of the fact that pit-head stocks at a given time, serve as a monitor of the quantum of coal being produced in the coal mines and the rate of clearance of stock by transport. If the pit-head stocks are below norms at a particular point of time, it may mean either a decrease in production or a faster movement of coal. In the former case, immediate remedial action is called for. The Committee therefore recommend that a careful and continuous watch should be kept regarding the quantum of stocks with reference to quantity offered, wagons allotted and		

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		actual loadings. Norms should be fixed in the light of experience, to determine the quantum that should be held in stock facilitating proper grading or despatch of coal. Any fall in the stock below the norms should be properly analysed to find out whether it is due to a real improvement in the movement of coal or due to slackening of effort in the production of coal in which case, urgent action should be taken to set things right.
21	3.86	The Committee note that the production of soft coke during 1972-73 was 2.2 million tonnes which rose to 2.9 million tonnes during 1973-74. The demand for soft coke has been assessed at 3.3 million tonnes in 1974-75 and by the end of the Fifth Plan the demand for soft coke would be of the order of 6 million tonnes.
	3.87	The Committee would like to draw attention to the prevailing scarcity of soft coke for domestic consumers on account of inadequate transport. The Committee have already emphasised the importance of ensuring adequate supply of soft coke to the domestic consumers, after a proper assessment of the demands of this sector.
22	3.88	The Committee note that manufacture of smokeless domestic fuel as a means of reducing dependence on firewood and kerosene was also being provided for in the Low Temperature Carbonisation Plants which are modern carbonisation plants. The Committee have been informed that provision has been made in the Fifth Five Year Plan for 9 million tonnes of raw coal for both soft coke production and LTC production and that the provision for LTC coke was further being reviewed in the context of the studies made by the Working Groups of the Planning Commission regarding feasibility of substitution of coal for oil.

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	3.89	The Committee note that soft coke, which was originally made from coking coal is now made out of Grade-III B coal in the interests of conservation of coking coal and that the concentration of manufacture of soft coke in the Katrasgarh area, where such coal is mostly found, has resulted in transport problems. It has been claimed that if the arrangements for transport could be made, Grade-III B coal can be converted into soft coke within a week's notice. The Committee need hardly emphasise that there is an imperative need for extensive use of soft coke, in view of the present oil crisis and the desirability of conserving cowdung for use as fertiliser and also bringing about reduction in consumption of firewood. Since the production of soft coke presents no difficulties and the problem is mainly one of transport, all impediments that stand in the way of coke supplies to common man, should be removed by foresight, determination and coordinated action. The Committee therefore urge that vigorous efforts should be made to increase the production of soft coke to satisfy adequately the rising demands; and to streamline the transport arrangements by concerted efforts. The matter is no longer one of choice but of necessity, to make available an essential fuel to the public at large.
	3.90	The Committee further note that soft coke has hitherto been made in a somewhat unscientific manner and that a decision has been taken to put up two L.T.C. plants, one in the Bengal-Bihar area and the other in the Singareni area. The proposal to set up L.T.C. plant of 900 tonnes per day at Singareni which will give net yield of 500 tonnes per day of L.T.C. coke, has already been approved; the capital cost of the Project being Rs. 7 crores with a foreign exchange component of Rs. 10 lakhs. The plant is expected to be erected and commissioned in about 30 months

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		time from the date of approval. The programme for L.T.C. plants in the Fifth Plan is to be further reviewed in the light of the decisions taken on the basis of the studies made by the Working Groups of the Planning Commission, which are said to be under examination. The Committee also note that a 1500 tonnes per day Carbonisation plant will produce roughly 1000 tonnes of smokeless solid fuel, about 13 million cubic feet of town gas and 120 tonnes of tar per day, serving about 12.5 lakhs population. The production of L.T.C. coke, smokeless domestic fuel with valuable by-products of town gas and tar has immense possibilities of revolutionising fuel supply in the context of the oil crisis. The Committee urge that concerted efforts should be made to implement the L.T.C. programmes in the overall context of the demand potential, national priorities and economics of production and supply.
	3.91	The Committee also note that the Bharat Coking Coal Ltd. has found it feasible to manufacture soft coke from middlings and that production plans are under way to manufacture 6 to 9 lakhs tonnes of soft coke per year from middlings. The Committee would watch with interest the efforts made to produce soft coke out of middlings. They presume that only those middlings which are not suitable for Thermal Power Plants would be utilised in this process.
23	3.100	The Committee note that the production of Hard Coke during 1972-73 and 1973-74 was 1.911 m.t. and 2.057 m.t. respectively. The Committee have in an earlier Chapter referred to the absence of any data regarding the actual demands for Hard Coke and recommended remedial action to develop a rational system for assessment of demands. In the absence of correct data regarding demands, the production figures cannot convey any precise idea of the degree to which they fulfil the needs.

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	3.101	The Committee note that there have been persistent complaints of short supply and unsatisfied demands for Hard Coke. The Committee further note that a Committee set up in October, 1973 to assess the demand for Hard Coke of various grades for different types of industries, has estimated the total Hard Coke requirements from State sector as 5110 wagons per month. The Committee have in an earlier Chapter emphasised the need for correct assessment of demands, based on the estimates made by the Committee on Hard Coke requirements. It is very necessary that the production programme for Hard Coke is reviewed in the light of these assessments.
	3.102	The Committee note that Hard Coke is mainly of two varieties, one manufactured from Beehive ovens and the other from by-product ovens. The process of manufacture from Beehive ovens, it is stated, involves waste of valuable by-products, though the ovens can be set up within a period of eight months to one year. The process of manufacturing through By-product ovens yields valuable by-products such as Toluene, Benzene, Tar etc. but it takes three years to put up such ovens. The Committee note that Bharat Coking Coal have completed the unfinished coke oven batteries and improved the working patterns of the ovens, and that production of Hard Coke has already registered an increase. The Committee hope that earnest efforts will be made to step up the production of Hard Coke to match the demand and that the valuable by-products would not be allowed to be wasted.
24	3.106	The Committee note that during 1973 production of coal has suffered in the Assam coalfields on account of flooding of mines. The production of coal which had fallen to 25,000 tonnes in Octo-

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		ber, 1973 has picked up to 37,000 tonnes in January, 1974. The Department has explained that flooding of mines is not an uncommon occurrence but in 1973 there was an extra ordinary in-rush of water which could not be foreseen. The capacity of the pumps installed was not sufficient to cope with the volume of water. The Department has stated that the installed capacity of the pumps is being increased to 2000 gallons per minute in place of the earlier 600 gallons per minute.
		The Committee regret that the need for higher capacity pumps was not foreseen earlier. They hope that necessary action to instal pumps of higher capacity and other requisite measures will be taken without further loss of time, so that production of coal does not suffer on account of flooding of mines in future.
	3.107	The Committee also recommend that the position regarding installation of higher capacity pumps may also be reviewed in respect of other coal mines which are similarly susceptible to flooding.
25	3.110	The Committee note that during 1970, the output per manshift in the coal mines in India was 0.67 tonnes as against 17.27 tonnes in U.S.A., 9.03 in Canada, 4.74 in Czechoslovakia, 2.14 in U.K. and 1.54 in Poland. During 1973, the output per manshift in the coal mines in India came down to 0.60 tonne against the earlier figure of 0.67 tonne achieved in 1970. The Committee are greatly concerned to note that O.M.S. in India is very low compared to other countries and that it has further gone down in 1973 to 0.60 tonne instead of increasing upward as compared to the year 1970.

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	3.111	The Committee would like Government to investigate fully the reasons for the fall in O.M.S. in 1973 as compared to 1970 and take necessary remedial measures for augmenting productivity.
26	3.113	The Committee understand that the project of manufacturing formed coke has interesting possibilities from the point of view of conservation of coking coal. They would like that the economics of the project should be carefully worked out. Taking into account the dwindling reserves of coking coal available in the country and the comparatively abundant reserves of non-coking coal, it may represent a break through of significance if found economically and technically feasible.
27	3.122	The Committee note that the gross reserves of coal in India are estimated at about 81,000 million tonnes by the Geological Survey of India, out of which the coking coal reserves account for *11,400 million tonnes. The Committee further note that the net coking coal reserves available for metallurgical purposes are estimated at 3180 million tonnes only, which are not expected to last for more than 50 years. The reserves of non-coking coal, though apparently abundant, are poor in quality and unevenly distributed among different regions of the country.
	3.123	The Committee understand that there is an apprehension that the reserves of coking coal may prove to be inadequate to cater to the growing needs of a modern steel based economy. As regards non-coking coal, the apparently prolific reserves may also be found to dwindle fast with the increasing dependence on coal as fuel.
	3.124	The Committee are of the view that there are immense possibilities of locating more reserves

*At the time of factual verification the Department has stated that the coking coal reserves are 20,154 million tonnes.

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		by intensive exploration and drilling with advanced techniques and methodology. Considering the prime importance of coal in the economic development of the country, the Committee need hardly stress the imperative need to intensify exploration and locate new reserves of coal. Geological exploration has to keep itself always abreast of the plans of coal production in view of the long gestation period of new mines. The Committee, therefore, recommend that a strategy of large scale mapping and proving of the coal deposits in qualitative and quantitative terms should be undertaken on an extensive scale so that development plans for the future are not disturbed by coal shortage. The Committee would also like that efforts should be made to prospect for new new reserves of coal near the bulk consumers as far as possible so that new coal mines are developed in proximity to the consuming centres. This would help to rationalise movement of coal and give a fillip to the development of all parts of the country, particularly the backward areas. It is of the utmost importance that a well-coordinated programme of survey, investigation and exploratory drilling for coal deposits is formulated and implemented according to a time-bound programme, to meet the long term needs of the steel industry and other users.
28	4.10	The Committee note that distribution of Coking Coal is under statutory control and allocation is made by the Coal Controller, through monthly Coal allocation meetings attended by representatives of producers, major consumers and the Railways. Likewise, distribution of Hard Coke is under the control of a Joint Coke Allocation Committee which is headed by the Coal Controller. In the case of Soft Coke, brick-burning coal, coal for State sponsored consumers like glass, refractories, engineering industries,

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		small scale industries etc., despatches are effected to nominees of State Governments/Union Territories and other statutory bodies belonging to the States. Despatches of non-coking coal are effected against the quantities sponsored for the various consumers by respective sponsoring authorities and as per the priority allocated by the Railways.
	4.11	The Committee also note that currently the requirements and supplies to loco, power houses, steel plants, cement plants, textiles, fertiliser and some of the engineering industries which account for 80 per cent of the total despatches are stated to be more or less streamlined. The problems of distribution are more or less confined to the small consumers, mostly under State priorities who do not enjoy a high priority for the supply of wagons.
	4.12	The Committee further note that the Coal Mines Authority has taken a decision not to allow any commission to middlemen/traders for supplying coal to the consumers. If any consumers choose to utilise the services of middlemen, they will be required to bear the service charges themselves. It is expected that the major consumers will build up on their own suitable organisations to take over effectively the functions currently being discharged by the middlemen.
	4.13	The Committee note that a High Level Committee under the Chairmanship of the Deputy Minister of Mines has been set up to look into the problems relating to transportation and distribution of coal and that a number of important decisions have been taken by that Committee. The Committee would like Government to take concerted action to see that an analysis is made in depth of the transport and distribution ar-

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rangements and concrete measures taken to ensure that the mining capacity and the rail transport facilities are developed hand in hand in order to meet rationally and satisfactorily the requirements of users.

4.14 The Committee note that the following proposals/schemes are under consideration of Government to help the low priority consumers:—

(i) to modify the present system of sponsorship for such consumers and to make State Governments responsible to assess and consolidate the requirements of such consumers and to arrange for equitable distribution to them after obtaining coal against such consolidated demands;

(ii) to open dumps under the control of State Governments to cater to the needs of these consumers;

(iii) opening of branch offices by Coal Mines Authority at important consuming centres.

4.15 The Committee are concerned to note that the scheme for making the State Governments responsible for assessment and consolidation of requirements of such consumers has not been finalised inasmuch as information has yet to come from State Governments. As regards the scheme for opening dumps, the Committee have referred to this matter in detail in the section of the Report relating to Coal dumps.

4.16 The Committee urge that the constraints in implementation of these schemes should be sorted out and effective solutions found so that these could be finalised and implemented expeditiously in the interest of assured and more equitable supply to industries and other users falling in the category of low priority consumers.

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29	4.17	The Committee have earlier emphasised that it should be impressed on the State Governments that the assessment of requirements of coal for non--priority consumers like brick-kiln industry, small scale industries and domestic consumers should be done in a realistic manner so that the consolidated demands by the States reflect their genuine needs of coal. The quota of coal for the non-priority sector industries should be fixed for each State after carefully examining their current and future needs and the number of industrial units/consumers to be catered to by them.
30	4.18	The Committee would also like to point out that the classification of industries as high priority and low priority for purposes of movement of coal, however, justified, is weighted against the small consumer. Situations arise when the small consumer finds himself left out and has to face a battle of economic survival. The Committee urge that the needs of these consumers should be met adequately. The Committee note that commodity quotas in terms of wagons per day have been fixed for Hard Coke, Soft Coke and brick-burning coke at 300, 200 and 200 respectively and that the Committee under the Chairmanship of the Deputy Minister of Steel and Mines has suggested an increase of quota for Soft Coke to 300 wagons per day. They are concerned to note that the loading for Soft Coke and brick burning continues to remain at a lower level of 130 wagons per day and 107 wagons per day respectively.
	4.19	The Committee need hardly stress that small scale industries and brick kilns play an important role in the overall economic development of the country and it is, therefore, of the utmost importance that their genuine requirements are met so that these industries do not run into difficulties on account of short supply of coal.

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		The Committee consider that the satisfaction of the needs of domestic consumers, who are large in number, is of prime importance, particularly in the context of the difficulties being experienced in getting ready supply of Kerosene oil. Concerted efforts should be made to gear up Railway transport capacity so that these consumers also receive their due share of wagons and coal. The Committee would also urge that a continuous review of the requirements of these consumers should be made to ensure that the quotas fixed and the supplies made meet their needs adequately.
31	4.30	The Committee are concerned to note that the supply of Coking Coal to the Steel Plants during the years 1969-70 to 1973-74 has shown a shortfall to the extent of 0.30, 1.61, 2.90, 2.76 and 3.44 million tonnes respectively. The Committee also note that the total daily requirement of coal by the steel plants is of the order of 36,600 tonnes which requires 2700 rail wagons to be loaded per day. They regret that from August 1973, coal movement did not keep pace with the requirements and on several occasions, coal stocks were depleted at the steel plants on account of the dislocation of the railway services. In January, 1974, the daily average loading was only 1933 wagons, against the actual requirement of 2700 wagons per day and consequently the stocks of coal went down from 1,47,000 tonnes (as on 1-1-74) to 1,15,000 tonnes as on 1.2.1974.
	4.31	The Committee further note that the dislocation of railway movement had also resulted in the building up of large stocks of finished steel at all the steel plants. On 1.2.1974 there was an accumulation of 3,61,000 tonnes of finished steel at all the steel plants as against the normal stock of about 1,50,000 tonnes.

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	4.32	The Committee are distressed to note that the availability of coal to the steel plants has been badly affected during 1973 and early part of 1974 due to difficulties in the movement of traffic on the Railways. The main problem in the movement of coal is attributed to labour trouble. The Committee have dealt in detail with the problems of inadequacy of transport in the Chapter on "Movement of Coal". The Committee would like to emphasise the need for maximum vigilance in maintaining an uninterrupted supply of coal to the Steel Plants, so that the production of steel does not suffer.
32	4.33	The Committee note that the Khandelwal Committee set up in August, 1973 as a result of the decision taken by the High Level Committee to examine *inter-alia* the different methods of reducing the detention time of wagons within the Steel Plants, washeries and mines, has since submitted its Report. The Committee would like to stress the need for early examination of that Report with a view to eliminate the bottlenecks coming in the way of smooth and efficient handling of traffic.
33	4.42	The Committee note that according to the data furnished by the Department there had been shortfall in the supply of coal to the cement industry to the extent of 1.90, 2.18, 2.01 and 2.80 million tonnes respectively during the years 1970-71, 1971-72, 1972-73, and 1973-74 respectively. The Committee further note that according to the data furnished by the Cement Industry there had been heavy shortfall in the production of cement during August, 1973 to July 1974 ranging from 1.28 lakh tonnes to 4.64 lakh tonnes per month. This shortfall is attributed *inter alia* to short supply of coal, apart from other reasons like shortage of power. Increase in demands for

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		slack coal from power stations was stated to have also affected the availability of slack coal for cement industry. The representative of the Ministry of Railways admitted during evidence that shortage of wagons for the movement of coal was the main reason which had affected coal supplies to the cement factories. Against the average daily requirement of 1100 wagons, the actual availability was only 750 wagons in the Raniganj area.
	4.43	The Committee regret to observe that cement production has been adversely affected due to several factors, one of them being shortage of coal supply. The scarcity of cement has further affected various developmental projects/programmes. While noting that the Standing Linkage Committee has finalised coal allocation of all the cement factories, the Committee would urge that a continuous review be made of the linkage arrangements and the coal quotas fixed for each cement factory taking into account the likely realisation of coal production in the various coal-fields and the availability of transportation so that the cement industry, which is in the core sector of the economy, does not suffer constraint in production, due to shortfall in supply of coal. The Committee would also draw the attention of Government to their recommendations, contained in paras 2.34 to 2.37 and 3.71 of their Sixtieth Report on Availability and Distribution of Cement, which deal with inadequate supply of coal to cement industry and would reiterate the need for coordination among the Ministries of Industrial Development, Department of Coal and Railways to ensure adequate and timely supply of coal to the cement industry, and for vigilant follow-up measures by the Joint Monitoring Cell, the Control Room in the Ministry of Railways and the Committee of Secretaries.

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34	4.44	The Committee are not sure whether the requirements of coal for cement industry would go down in the Fifth Plan period largely because of anticipated production of slag cement and technological changes in production of cement by the dry process which required less fuel as assumed by the Planning Commission. The Committee would like to stress that the provision of coal for cement industry should be made after fully taking into account the projected expansion in the production of cement during each year of the Fifth Plan period.
35	4.50	The Committee note that since November, 1973, the Railways have been experiencing shortfall in coal supplies. Steam coal which was consumed by the Railways and several other industries, had not been available in sufficient quantity to meet the demand of all the consumers. Consequently the Railways reduced their own consumption of coal by curtailing some departmental and shunting services and also by suspending some short distance passenger trains. It has not been possible to build up coal stocks because from November, 1973 onwards, there had been a spate of staff agitations on the Railways, followed by the Locomen strike in December, 1973 which severely affected the loading of coal in the Bengal-Bihar coalfields.
	4.51	The Committee also note that 284 pairs of passenger trains have remained cancelled due to shortage of coal even during November, 1974.
	4.52	The Committee are surprised to note that the figures of demand and supply of coal to Railways furnished to them, do not indicate any shortfall in overall supplies of coal to the Railways. It is therefore paradoxical that while on the one hand the demand of coal for the Railways appears to have been met fully, there have been persistent shortfalls in availability of coal to the

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		Railways resulting in cancellation of train services causing inconvenience to travelling public. It appears to the Committee that shortfall in coal supplies to the Railways may be partly due to the Railway's demand for coal as originally projected, being on the low side. The Committee would urge that a thorough probe into the circumstances in which the Railways experienced shortfall in supplies of coal should be made by Government to find out whether it was due to inadequacy in forecasting of demand by Railways, production deficiencies or transport bottlenecks etc., and should devise effective remedial measures to ensure against recurrence of such situations.
36	4.53	The Committee further note that a spate of staff agitations on the Railways has also been responsible for the slackness in loading of coal in the Bengal-Bihar coalfields. The Committee hope that now that the Railway strike is over, the Ministry of Railways would make concerted efforts to elicit the cooperation of their employees and to enthuse the staff to pull their weight in the task of efficient running of Railway transport which is vital for the national economy.
37	4.54	The Committee also suggest that a re-assessment of the requirements of coal for Railways during the Fifth Five Year Plan, be made in view of the oil crisis so that steps may be taken to plan the production of the requisite quantity and quality of coal for the Railways. It should also be ensured that coal supplies to the Railways are linked to particular coal fields as has been done in the case of power plants, so as to facilitate planning and ensure regular and steady supply of coal to the Railways.
38	4.66	The Committee regret to note that supply of coal to the Thermal Power stations during 1970-71, 1971-72, 1972-73 and 1973-74 had been very

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		erratic. The shortfalls in supplies are of the order of 1.91, 1.18, 1.89 and 5.88 million tonnes respectively during the period 1970-71 to 1973-74. Very few power stations had enough stocks of coal which would last even for 10 or 15 days. The power stations had to face great anxiety in the absence of sufficient quantities of coal which had to be rushed to the needy Power stations to meet their day to day requirements. According to the representative of the Ministry of Irrigation and Power, the Power stations have been operating on hand to mouth basis. From the data furnished by the Ministry of Irrigation and Power, the Committee note that as many as 20 Power stations in the country were affected due to shortage of coal during 1972 and 1973 in various States and had reduced generation of electricity. The data indicates that for want of adequate supplies of coal in time, these Power stations had occasionally either to close down or to work far below their maximum capacity. The Committee also note that the unsatisfactory quality of middlings supplied to the Power stations has also contributed to additional demands from power stations for raw coal which has produced a strain in coal supplies to other consumers. The Committee are greatly concerned at the loss in power generation due to non-availability of coal as it has adversely affected not only industrial production but also production of foodgrains in the country which is very vital for the economy.
39	4.67	The Committee further note that some Power stations for example of Ennore (Tamil Nadu), Basin Bridge (Tamil Nadu) and Trombay (Maharashtra) are being fed with coal as well as oil. In view of the enormous rise in the cost of oil in recent times, it is imperative that the use of oil in Power stations is reduced or completely eliminated. The Committee note that the Reports of the Working Groups of the Planning Commission

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		regarding Primary fuel substitution and Secondary fuel substitution in power house boilers are under examination by the Planning Commission. The Working Groups have found conversion to coal firing technically feasible with some modifications to certain equipment and additional plant and equipment. The Committee would point out that any such scheme of conversion would succeed only if provision of coal of the required quality and quantity is ensured. The Committee recommend that the additional requirements of coal of those power stations which have to be converted from fuel oil consumption to coal firing should be worked out and implemented, at the earliest.
40	4.68	The Committee note that the largest consuming sector for non-coking coal is thermal power generation. The coal consumption by thermal stations as tentatively estimated in the draft Fifth Five Year Plan is 45 million tonnes (excluding 6.5 million tonnes of middlings), which is more than double the requirements at the end of the Fourth Plan. This estimate is subject to revision in the light of the oil crisis. The magnitude of the estimated increase in coal consumption by power stations is tremendous and demands concerted measures for simultaneously developing adequate production and transport capacity with linear programming for effecting supplies speedily and economically supported by monitoring and evaluation devices.
41	4.69	The Committee note that the Coalfields Linkage Committee, 1973 have studied the problem of coal requirements of existing and approved power stations and their linkage to particular coalfields. The Standing Linkage Committee is stated to have finalised the coal linkages for all the power stations included in the Fifth Plan programme. In addition, a Control Room is func-

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		tioning in the Railway Board for monitoring day to day coal supplies to the thermal stations. The Committee recommend that coordinated efforts for making optimum use of the available resources in production and transport should be made vigorously and concrete measures taken to ensure that power generation, which is so vital for the economy of the country, is not hampered and that assured supplies of coal are made available regularly and in time to enable the power houses to function with adequate margin of stocks and not on 'fire-fighting basis' as at present.
42	4.70	The Committee also recommend that the loading and unloading arrangements for coal at each end should be reviewed with a view to facilitate quick deployment of available wagons. Moreover, optimal stock levels for each plant should be worked out with reference to the source of coal supply, its distance from the power plant, reliability of the rail link, the seasonal variations in these factors etc. The Committee would also invite particular attention to their earlier recommendation that coal production plans and requirements of big consumers should be synchronised. This recommendation is particularly significant in the case of Power stations whose requirements are fairly well established and would therefore facilitate drawing up of meaningful plans for thermal power generation in a coordinated manner with the development of coal production side by side with the augmenting of the necessary transport facilities.
43	4.71	The Committee need hardly stress that it is of the utmost importance to develop the outlying coalfields to feed the Thermal power stations so as to avoid strain on transport as also long distance haulage of coal to meet the needs of the Power stations.

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44	4.72	As regarding the unsuitability of the Middlings supplied to the Power plants, which has resulted in more demand for raw coal, the Committee have referred to this aspect later in the relevant section of the Report. This is a matter which should exercise the attention of the authorities concerned to ensure that the inputs for the functioning of the thermal Power plants satisfy the basic criteria of quality.
45	4.73	It must also be ensured that the boilers of new Thermal Power Stations are so designed that they can use coal of different grades available from neighbouring coalfields. For the existing Power stations efforts should be made to introduce such modifications in the boilers as would enable them to utilise coal of a quality/grade which is available from the coalfield to which they have been linked.
46	4.74	The Committee would like that coal requirements of each Power Station should be worked out carefully not only for the Fifth Plan but even for the Sixth Plan period so that long term planning for production and movement of coal to thermal power stations is done in time. The Committee have no doubt that in future big thermal power stations would be located near the coalfields, as far as possible, to avoid haulage of coal over big distances and consequential strain on transport system.
47	4.80	The Committee regret to note that during the years 1970-71, 1971-72, 1972-73 and 1973-74 there have been shortfalls in the supply of coal to the Brick kiln industry, of the order of 2.14 m.t., 3.24 m.t., 3.85 m.t., and 4.28 m.t., respectively. The Committee note that in the system of distribution this industry falls in the category of low priority consumers for whom wagons are allotted after the requirements of the higher

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		priority consumers are met. The Committee are concerned to note that although a quota of 200 wagons per day, has been fixed for this industry, the actual average achieved so far is 107 wagons per day *i.e.* about 53.5 per cent. The Committee need hardly stress that both the coal producing and transport organisations which are in the public sector, should make coordinated efforts to meet the requirements of coal of Brick kiln industry and should draw up an integrated long-term plan for the purpose.
	4.81	The Committee has strongly urged earlier that a scheme of equitable distribution of coal to the low priority industries should be devised and implemented without delay in order to assist these industries to make useful contribution to the economic development of the country. The Committee trust that with the implementation of such a scheme the Brick kiln industry will be able to meet the increasing demand for bricks by various consuming sectors.
48	4.92	The Committee have already commented on the system of assessment of demand and distribution in respect of low priority consumers of which domestic consumers of Soft Coke form an important part. The Committee need hardly emphasise the imperative need for a scientific and rational system of assessment of demands and a scheme of rational and equitable distribution. They feel that unless the demands of domestic consumers are correctly ascertained and necessary production, transport and distribution arranged and streamlined, scarcity conditions for this commodity which has assumed importance in view of the oil crisis, would continue to prevail, causing hardship to the vast number of domestic consumers.
	4.93	The Committee are concerned to note that there is an enormous gap between demand and

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		supply of Soft Coke in most of the States as evidenced by the shortfall to the extent of 1.63, 2.32, 3.31 and 3.43 million tonnes during 1970-71, 1971-72, 1972-73 and 1973-74 respectively. The Committee note that this gap is mainly attributable to difficulty in movement as production of Soft Coke is stated to present no difficulties since Grade III B coal can be converted into Soft Coke within 4 days.
49	4.94	The Committee have earlier in para 3.80 of this Report referred to the change in the method of manufacture of Soft Coke from better quality Coking Coal to inferior grade coal which is mainly concentrated in Katrasgarh and the problem which has arisen in transport logistics, as the siding facilities at Katrasgarh do not permit the loading of all varieties of coal simultaneously. The Committee regret to note that out of the eleven siding facilities at Katrasgarh which were expected to be completed by June, 1974, two are still incomplete. The Committee urge that all the sidings should be completed and commissioned expeditiously and movement of Soft Coke from the Katrasgarh depot should be undertaken on a large scale to ease the situation regarding short supply of Soft Coke to the Consumers.
50	4.95	The Committee note that the quota of 200 wagons per day which was fixed for movement of Soft Coke, has been recommended to be increased to 300 wagons per day by the Committee set up under the Chairmanship of the Deputy Minister of Mines. They regret to observe that the number of wagons allotted from February, 1974 to August, 1974 is in the region of 86 to 130 wagons only. The Committee see no reason why the Railways, with their vast fleet of wagons, cannot make the requisite number of wagons available for the transport

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		of Soft Coke. They trust that with the commissioning of additional sidings, the Railways would increase the availability of wagons for the movement of Soft Coke to at least 300 wagons per day so as to meet the requirements of the domestic consumers adequately.
51	4.96	The Committee have referred earlier in the Chapter on "Production" to plans for the production of Coke from Low Temperature Carbonisation Plants and conversion of middlings into Soft Coke. The Committee have also referred to the need for making provision for increased demand for Soft Coke during the Fifth Five Year Plan over and above the quantity as tentatively targetted. The oil crisis has highlighted the difficulty in meeting fully the demand of kerosene oil and has underlined the importance of Soft Coke as the main domestic fuel for the majority of domestic consumers. It is, therefore, imperative that production and availability of Soft Coke is maximised to meet the increasing demand for Soft Coke.
52	4.97	The Committee would like that the possibilities of manufacturing Soft Coke from the coal obtained at the outlying coalfields should also be explored in the interest of avoiding transport congestion and long haulage.
53	4.98	The Committee note that no progress has been made by the State Governments to popularise the use of Soft Coke so as to conserve cow dung which is a valuable organic manure for the crops. They realise that the rural population are used to burning cow dung as a fuel which is available to them free of cost but they have no doubt that with proper guidance and easy and assured availability of alternative domestic fuel, like Soft Coke at reasonable prices, the rural population could be induced to utilise cow dung for a better

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		purpose. The main thrust should, therefore, be to ensure availability of Soft Coke in adequate measure and at a reasonable price and then to undertake vigorous steps for popularisation of its use as domestic fuel so as to avoid scarcity conditions regarding supplies of fuel to the rural population.
54	4.99	The Committee note that the Gobar Gas Scheme of the Khadi and Village Industries Commission which envisages the production of both fuel gas and manure from cow dung, is being undertaken on a large scale by the Government during the Fifth Plan period. The Committee recommend that a close watch on the implementation of this Scheme which has immense potentialities to provide fuel and fertiliser to the rural population, should be kept.
55	4.105	The Committee note that during 1973, supply of 30,000 tonnes of Soft Coke was programmed for the Union Territory of Delhi. But the actual supplies which materialised were only about 20,000 tonnes. The Committee further note that Bharat Coking Coal Ltd. made the programme for despatch of Soft Coke to Delhi every month in consultation with the Railways. The Soft Coke on arrival in Delhi was received by an agency of the Delhi Administration namely the Delhi Wholesale Consumers Cooperative Society. This agency was responsible for distribution of coal to the consumers, through various Soft Coke dealers.
	4.106	The Committee regret to note that the supply of Soft Coke to Delhi has been erratic and far below the requirements though it is said to compare favourably with supplies to other States who do not appear to have received even 30 per cent. of their total requirements. From the figures of supplies furnished for January, 1974

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		and subsequent months, the position appears to have somewhat improved. Even so, it cannot be said to be actually satisfactory as barring one month, the supply of wagons never reached the monthly quota of 1200 wagons in Summer and 1500 wagons in Winter. The Committee have earlier stressed the necessity of evolving a proper system of assessment of demands, distribution and transport. The Committee urge that integrated planning should be undertaken to meet the requirements of Soft Coke for Delhi and other metropolitan towns as the non-availability of this domestic fuel causes widespread hardship. The Committee would also like Government to examine cases of dilatoriness in taking delivery of the stocks presumably to exploit scarcity conditions and institute prompt action against such unfair practices.
56	4.111	The Committee note that there have been shortfalls in the supply of Hard Coke to the extent of .70 million tonnes, .61 million tonnes, .36 million tonnes, .27 million tonnes and .28 million tonnes during 1969-70 to 1973-74 respectively. The Committee further note that the demand for Hard Coke during the period August, 1973 to March, 1974 varied from 15,244 to 17,184 wagons per month whereas the output of Hard Coke available from coke ovens other than those in the steel plants, was about 8,625 wagons. Moreover, the rail transport capacity, earmarked for movement of this commodity, is 300 wagons per day.
	4.112	The Committee have referred earlier to the present unrealistic system of assessment of demands for Hard Coke and underlined the importance of precise assessment of demands and planning of production accordingly with a view to fulfilling the needs of the small scale industries using Hard Coke. The Committee have also referred to the assessment made by the Com-

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		mittee on Assessment of requirements of Hard Coke and desired that a rational and scientific assessment be made based on the yardstick evolved by that Committee. The Committee have also emphasised the need for making the State Governments responsible for assessment of demands and distribution of this commodity to the industries falling in their sector.
	4.113	The Committee urge that early action be taken on these recommendations and suitable steps taken to see that production of Hard Coke is suitably increased and adequate transport is provided by Railways to meet the increased requirements for the movement of this coal.
57	5.46	The Committee note that over 90 per cent. of the coal produced in the country, is carried by Railways. The Committee have indicated in the Chapter on "Supplies" that inadequacy of transport is one of the major bottlenecks in the availability of coal to the consumers. The Committee regret to note that the despatches by rail in 1969-70 which reached a peak at 71 million tonnes have come down to 64, 65, 67 and 60.6 million tonnes during 1970-71, 1971-72, 1972-73 and 1973-74 respectively. The daily average loading of coal which was 81.191 wagons in 1969-70, has dropped to 7,474 in 1970-71, 7,738 in 1971-72, 7,983 in 1972-73 and 7,228 in 1973-74. This decline in despatches has been attributed to a slide back in transport in the Bengal-Bihar coalfields which originate more than 70 per cent of the coal traffic. The daily average loading from those fields dropped from 6,242 wagons in 1969-70 to 5,612; 5,733; 5,805; and 5,299 wagons during 1970-71, 1971-72, 1972-73 and 1973-74 respectively. This decline has been ascribed to anti-social activities, Indo-Pak conflict, refugee problem, withdrawal of troops, staff agitations, extensive power cuts etc.

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	5.47	The Committee are greatly concerned that the performance of the Railways has been consistently poor after the peak in 1969-70 and that it touched the lowest level in 1973-74. They are distressed at the decline in loading of wagons which has adversely affected the supply of coal to the consumers and consequential decline in production in many industrial sectors.
58	5.48	The Committee are unable to comprehend why the Railways which were to be geared to move the targetted traffic of 84.4 million tonnes of coal traffic during the Fourth Five Year Plan (later revised to 77.5 million tonnes at the time of Mid-term Plan Appraisal) could move only about 60 million tonnes of coal during the last year of the Plan; which is 17 million tonnes less than the revised target and 11 million tonnes less than what was actually carried in the first year of the Fourth Plan. In this context it is pertinent to recall that the Railways have made a capital investment of over Rs. 1,400 crores during the Fourth Plan and there is no reason why they should not have developed the capacity for carrying at least 77.5 million tonnes of coal traffic (if not 84.4 million tonnes as originally envisaged in the Fourth Plan) when the money made available for the Plan was fully expended. The Committee are not impressed with the general reasons which have been advanced by the Railways for this unsatisfactory performance in the matter of transport of coal. The Committee feel compelled to draw pointed attention to this shortfall in the movement of coal by Railways which has had such wide repercussions on economy and stress that detailed and thorough planning (direction-wise, route-wise etc.) should now be done at least for each year of the Fifth Five Year Plan to ensure that Railways move in full the coal required by various industries and consumers all over the country.

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	5.49	The Committee note that recently there has been improvement in the daily average loading of wagons which has increased to 8224 in August, 1974 and 8493 in September, 1974. The Committee have no doubt that with concerted and well directed efforts and optimum utilisation of the existing facilities by the Railways, it should be possible for them to increase the daily loading of wagons considerably so as to meet fully the needs of coal movements to the consuming centres.
59	5.50	The Committee note that the production of coal which was tentatively fixed at 135 million tonnes in the Draft Fifth Five Year Plan, may go up to 145 million tonnes if the revised programme, proposed by the Department, is accepted. The Task Force on Coal and Lignite has estimated the rail transport requirements of coal at about 125 million tonnes by the end of the Plan. The Committee were informed during evidence that for moving one million tonnes of coal in a year, the daily requirement of wagons will be about 125. On that basis, the transport of 125 million tonnes of coal by rail would require daily average loading of 15,625 wagons.
	5.51	The Committee have earlier pointed out that the annual estimated percentage increase in Production of coal during each year of the Fifth Five Year Plan over the previous year, is of the order of 16 per cent, 9.7 per cent, 12.6 per cent, 13.5 per cent and 10.4 per cent respectively. Viewed against the daily average loading of 7,228 wagons during 1973-74 and 8,493 wagons in September, 1974, the provision of matching rail transport for the increased coal production during each year of the Fifth Plan, rising to a daily average of 15,625 wagons in 1978-79, poses a challenging task for the Railways. This task calls for concerted efforts in streamlining the

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		transport system and infusing it with a purpose and dynamism for optimum utilisation of existing resources. It is also of the utmost importance that adequate attention is paid to rail transport planning in regard to the development of additional capacity, provision of modern signalling and tele-communication facilities etc. The problems of coal movement in the Bengal-Bihar areas need serious attention and removal of all constraints which come in the way of movement (direction-wise, route-wise etc.) of coal.
60	5.52	The Committee in Chapter III have referred to the provision of transport for coal movement during the Fifth Plan from Bengal-Bihar and Outlying Coalfields where the projected increase in production as compared to 1973-74, is estimated to be of the order of 36.80 million tonnes and 30.44 million tonnes respectively. The Committee have recommended a study in depth regarding the feasibility of maximising production in outlying coalfields where the daily average loading of wagons has shown more improvement from time to time than that obtaining in the Bengal-Bihar Coalfields. The Committee would like Railways to develop sufficient transport capacity in the outlying coalfields in coordination with Coal Mining Authorities so as to be able to move any additional quantity of coal which may be required from there by consuming sectors, particularly the Thermal Power Stations, on account of switch over to coal consumption in the light of the oil crisis.
61	5.53	It is well known that linkages of major consuming sectors with coalfields are imperative for an efficient transport system. The Committee note that the Standing Linkage Committee has finalised the linkages in respect of

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		Thermal Power Stations and also the allocations in respect of Cement Industry. The Committee would urge that the linkage of coalfields to other major industries and washeries and of washed coal to steel plants should be expedited. The Committee need hardly emphasise that the linkages should be firm and effective and should be reviewed from time to time to remove bottlenecks in the way of smooth and efficient movement of coal to consuming centres. The Committee have no doubt that in fixing linkages, it would be ensured that bulk consumers are linked to the nearest coalfields with a view to reduce the lead to the minimum possible so as to economise on transport costs.
62	5.54	The Committee need hardly stress that plans for increased production of coal should be fully tied up with the Railways to make sure that coal is moved from the pithead to the users in adequate quantities and in time.
63	5.55	The Committee note that two Study Teams of the Railways have assessed the requirements of rail transport of coal and the facilities required during the Fifth Plan—one dealing with Bengal-Bihar coalfields and the other dealing with Outlying Coalfields. The Committee also note that a Task Force has prepared a plan for rationalisation of coal loading arrangements in the Bengal-Bihar coalfields. Another Committee under the Chairmanship of Shri G. D. Khandelwal has submitted a report recommending measures for reducing detention time to wagons within the steel plants, washeries and mines. These Reports contain various suggestions regarding layout of loading points, mechanisation of loading arrangements, loading in block rakes, reduction in number and remodelling of colliery sidings etc. The Committee urge that the recommendations contained in the reports of the Study Teams, the

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		Task Force and the Khandelwal Committee should be examined expeditiously, in consultation with the coal mining authorities, the Railways, major consumers etc., and decisions taken and implemented without delay. A firm time-bound programme should be prepared to implement such of the recommenations as are accepted by Government, in the interest of efficient movement of coal to the consuming centres.
64	5.56	The Committee note that there are about 1200 railway sidings from which loading of coal in wagons takes place at present. In the Raniganj coalfields, there are 380 loading points for coal which are proposed to be reduced to 120. In the Jharia coalfields, there are as many as 685 loading points which are sought to be reduced to 75. The Committee have no doubt that in the context of nationalisation of coal mines it should be easier to rationalise the loading points with a view to increase their loading potential as also to improve wagon usage. The Committee would like Government to take effective action in this behalf as per a time-bound programme.
65	5.62	The Committee note that in the collieries under the Coal Mines Authority in August, 1973, 5563 wagons and in September, 1973, 3720 wagons were 'drawn empty' and 'left behind'. In the Bengal-Bihar coalfields in October, 1973, 14,973 wagons were 'left behind' and 'drawn empty' on account of low pit-head stocks of coal and due to a large number of holidays. Even in January, 1974, 9,920 wagons were 'left behind' and 'drawn empty'.
	5.63	The Committee are surprised that no records regarding the empty running of wagons on account of non-availability of coal at the pit-heads are being maintained by the Coal Mines Autho-

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		rity/Railways. In the absence of such data, it is not possible to find out whether the wagons are detained or drawn empty on account of any lapse on the part of the Coal producers or the Railways. The Committee consider that in their own interest, the coal producing organisations namely CMAL and BCCL should maintain complete record about the allotment and movement of wagons. In the case of "left behind" and "drawn empty" wagons, the reasons for retention and empty running should be specifically indicated. As the department itself has stated that the incidence of "left behind" and 'drawn empty' wagons is hardly 25 wagons per day, it should not be difficult for the coal producers to maintain such statistics and to analyse them in the interest of taking timely remedial measures.
	5.64	The Committee recommend that a continuous analysis should be made of the reasons of wagons "left behind" and "draw empty" so that effective steps may be devised to reduce them to the minimum. It should be realised that detention of wagons, besides causing heavy expenditure on demurrage, constitutes a national waste from the point of view of utilisation of available transport capacity.
66	5.78	The Committee note that in order to have fast loading, some collieries have bunkering facilities with mechanical loading arrangements to load rake within the prescribed time. They further note that such facilities would be created in more collieries to improve turn round of wagons and that sidings are being reorganised in close consultation with the Railways. The Committee trust that with improved facilities at the collieries, the delay in loading of coal wagons would be minimised resulting in improved turnround of wagons. They would, however, like that a close

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		and continuous watch should be kept to eliminate detention of wagons in coal fields.
67	5.79	The Committee note that there are complaints of short receipt of coal by consumers and pilferages of coal during transit. The difficulty is stated as due to lack of weighbridges at the concerned points. The Committee recommend that cases of short supply of coal should be investigated and stern action taken in cases of pilferage so as to serve as a deterrent to others. The Committee suggest that as the sidings from which loading of coal is done, are now being rationalised, it should be possible to provide weighbridges at suitable point to obviate complaints of short despatch etc. from the consumers.
68	5.91	The Committee note that in May, 1961, it was decided by Government that coastal shipping should be utilised to a greater extent for moving coal from Calcutta to ports in Southern and Western India. A target of 2 million tonnes per annum was fixed for the movement of coal by the rail-*cum*-sea route. As the transport of coal by the rail-*cum*-sea route was found to be more expensive on account of higher freight, a subsidy scheme was also introduced for payment of subsidy on coal moved by ships.
	5.92	The Committee regret to note that except one year *viz.* 1962-63, when about 2 million tonnes of coal was moved by coastal ships, the despatches of coal by ships have been very low. In 1970-71 only 0.17 million tonnes were despatched by rail-*cum*-sea route. In 1971-72, 1972-73 and 1973-74, the movement of coal by rail-*cum*-sea route showed slight improvement but it was only 0.59, 0.63 and 0.59 million tonnes respectively.
	5.93	The Committee are unable to comprehend how the movement of coal by the sea route has been kept down to only 25 per cent of the target fixed therefor in the Fourth Five Year Plan especially

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		when acute shortages of coal were being experienced time and again in the southern and the western region of the country. The Committee feel that having regard to the need for development of coastal shipping, the huge investments made in development of major and intermediate ports like Visakhapatnam, Madras, Tuticorin, Mormugao, Bombay, Kandla etc. and the development of Haldia Port to handle 3.5 million tonnes of coal, it should be possible to have an integrated approach regarding movement of coal by coastal shipping particularly to destinations in the southern and western zones of the country. The Committee recommend that the Planning Commission should have firm targets (port-wise and destination-wise) with proper linkages with collieries and consumers so that the quantum of coal to be moved by sea and the agency for movement, Shipping Corporation of India etc. are specified and concerted measures taken to implement this plan in letter and spirit in the interest of making available in time the requisite quantities of coal to the consumers and the overall interest of developing coastal shipping which is vital for a country with an extensive coast like ours.
69	5.98	The Committee note that despatches of coal by road have increased from 10.7 million tonnes in 1970-71 to 16 million tonnes in 1973-74. Thus a large quantity of coal is moved by road even though road freight is higher than the rail freight. It has been stated that movement of coal by road is not essentially for want of wagons but due to other reasons also, like absence of railway siding at certain coal producing units, as also preference of some consumers, particularly those located near the mines, to move their coal by road. The Committee consider that with the enormous increase in the production of coal envisaged during the Fifth Plan, the movement

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		of coal by road, would increase substantially. They, therefore, recommend that the Department of Coal and the Ministry of Shipping and Transport should examine the potential and economic viability of road transport for the movement of coal and the extent to which this mode of transport can supplement the rail transport during the Fifth Plan period.
70	5.99	The Committee need hardly stress that while preparing schemes for development of roads, due care should be taken of the needs of the coal-fields in Bengal-Bihar area and other outlying coal-fields. The road development schemes should also take into account the location of the various coal dumps as in the absence of good roads, the Railways' programme of moving coal, only in rake loads to the coal dumps, may be seriously affected. Further as distribution of coal to the consumers from these coal dumps will have to be arranged by road, it is imperative that utmost importance is given to the development and maintenance of roads for this purpose.
71	5.100	The Committee further recommend that Government should undertake a detailed study of the transport requirements for the movement of coal during each year of the Fifth Plan and decide upon the most economic, efficient and feasible mode of transport *viz.*, by rail, road, coastal-shipping, inland water etc. which would meet the requirements and make necessary and timely arrangements therefor so that transport does not become a bottleneck in increasing coal production. It would be desirable if the mode of transport from each coal-field is decided in consultation with the linked consuming industry. The Committee recommend that such a study should be completed expeditiously, so as to make for development of best suited and most

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		reliable, economical and efficient means of transport facility.
72	6.19	The Committee note that there are at present 14 coal washeries for washing coal, out of which 11 are operating in the Public Sector and the other 3 in the Private Sector. The total rated coal capacity per annum of all the washeries, is *26.02 million tonnes. The raw coal input of all the washeries during 1971-72 and 1972-73 was 10.32 and 11.38 million tonnes respectively. The percentage utilisation of capacity of all the washeries taken together works out to 39.6 per cent during 1971-72 and 43.7 per cent during 1972-73. Excluding the Gidi washery, which was not in operation till 1973-74 the percentage utilisation works out to 44.8 and 49.4 per cent respectively, which is very low. The output of clean coal in 1972-73 and 1973-74 was only 8.31 million tonnes and 8.44 million tonnes respectively. The shortfall in output has been attributed to the non-availability of adequate number of wagons, reluctance of steel plants for using the coal washed in certain washeries, power interruption, lack of firm linkage for sinks etc.
	6.20	The Committee note that the Technical Committee on Coal Washeries had analysed the performance results of coal washeries in 1969-70 and had observed in their Report (1972) that excluding Kathara and Sawang washeries, the actual raw coal feed had been 11.05 million tonnes per annum which constituted about 59 per cent of their potential capacity. The Technical Committee also pointed out that the public sector washeries excluding D.P.L. washery at Durgapur, could utilise on the average about 63 per cent. of their available capacity.
	6.21	The Technical Committee also felt that the factor which was mainly responsible for low

*At the time of factual verification the Department has stated the figure as 25.77 million tonnes.

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		utilisation of capacity of central washeries in particular and pit-head washeries in general were transport bottlenecks in the movement of raw and washed coal, non-availability of essential spares and irregular off-take of washed products specially middlings. The Technical Committee also emphasised the need for improvement in the designing of baths and circuits of a number of washeries.
	6.22	From the latest figures of utilisation of capacity of the coal washeries both individually and collectively the Committee feel that during the years after 1969-70 the performance of coal washeries has not shown any positive improvement and was less than 50 per cent of the rated capacity.
	6.23	The Committee view with great concern the poor performance of the washeries on which a capital investment of about Rs. 56 crores has been made.
73	6.24	The Committee note that steps have been taken for improving the performance of the washeries and that it would take about 2 years' time to bring about the necessary improvements so that the washeries could work up to 75 per cent of the rated capacity. The Committee regret the delay in implementing the recommendations of the Technical Committee. The Committee would like Government to ensure that all the major constraints like transport bottlenecks in the movement of raw and washed coal; non-availability of essential spares for the efficient working of coal washeries and removal of inherent defects in designing of baths and circuits and lack of planning in supplying coal of requisite quality from the coal mines to the coal washeries are removed expeditiously. The Committee also urge that in the light of experience gained concrete measures should be taken to maximise the utilisation of the capacity of the existing washeries.

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74	6.25	The Committee note that the washing capacity is sought to be increased by 10 million tonnes, during the Fifth Plan period at an estimated cost of Rs. 55 crores. The Bharat Coking Coal Ltd., and Coal Mines Authority Ltd. are having schemes for setting up 4 new washeries during the Fifth Plan period. Two washeries with a capacity of 2 million tonnes each, are proposed to be set up at Monidih and Sudamdih for washing prime coking coal. For washing medium coking coal, 2 washeries with a capacity of 3 million tonnes each, are proposed to be set up at Ramgarh and Kedla Pundi. According to the estimate of the Task Force on Coal and Lignite, the existing washeries are estimated to produce 13.35 million tonnes of clean coal against the estimated requirement of 16.03 million tonnes during 1978-79 and that the proposed new washeries are necessary not only for meeting the deficit but also to cater to the increased requirements that will be thrown up during the Sixth Plan.
	6.26	The Committee are unhappy to note that the existing washeries which have a throughout capacity of *26.02 million tonnes for raw coal are expected to achieve only 13.35 million tonnes of clean coal even after carrying out the improvements recommended by the Technical Committee. Considering the heavy investments made in the existing washeries, the Committee recommend that all out efforts should be made to optimise the functioning of these washeries before setting up new units. The Committee would like this matter to be examined in depth. If it is considered to be an inescapable necessity to set up the proposed new washeries, the Committee would like to sound a note of caution that the difficulties and bottlenecks encountered in the

*At the time of factual verification the Department has stated the figure as 25.77 million tonnes.

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		working of the existing washeries to their full capacity should be fully taken into account and provided for while planning the new washeries so as to ensure their efficient functioning.
75	6.36	The Committee note that Gidi Washery with a capacity of 2.84 million tonnes of coal per annum and a capital investment of Rs. 9.5 crores was commissioned in November, 1970. The washery was originally conceived for washing some specific coal seams in Karanpura with a view to supply washed steam coal to Railways and washed slack coal to the steel plants for use as blendable coal. The Committee further note that both the Railways and the steel plants were reluctant to use the coal produced by this washery. The Railways find that the cost of washed coal is too high, compared to the cost of raw coal and consequently the Railways took a decision to use more of Grade I coal, instead of selected grade coal. As regards steel plants, there is at present sufficient raw blendable coal available to meet their current requirement which has not risen as expected, due to slow progress of steel production.
	6.37	The Committee are deeply concerned to note that Gidi Washery which was set up in November, 1970 at a capital cost of Rs. 9.5 crores, had remained idle for want of market and this has resulted in a total loss of Rs. 162.31 lakhs upto 31st March, 1973. The Committee are not sure whether the economics of the whole project had been worked out in sufficient detail before it was decided to set up this washery. Normally the cost of washed coal to be produced by this washery, should have been worked out and the concurrence of the Railway Administration should have been obtained therefor. Similarly, the extent of utilisation of the slack coal to be pro-

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		duced in this washery, for the steel plants, should have been fully considered. The Committee regret to observe that the Gidi Washery is a case of frittering away of public funds, without any consideration about the viability and remunerativeness of the Project and the marketability of the product. The Committee recommend that the whole matter should be thoroughly investigated with a view to fix responsibility on the persons concerned.
	6.38	The Committee note that trials were made to process the washing of medium coking coal in this washery from some of the newly taken over collieries and the results have been found satisfactory. The Committee hope that earnest steps will now be taken to utilise the coal washed by the Gidi washery. If any modifications are necessary to improve the quality of the washed coal, the same should be introduced immediately so that this washery does not remain inoperative any longer. The Committee would like an integrated plan to be formulated to make this washery run on economic lines, by ensuring a steady demand for its product.
76	6.42	The Committee regret to note that the capacity utilisation of Kathara Washery in terms of clean coal production was only 12.3 and 13.7 per cent during 1970-71 and 1971-72 respectively. Even after some improvement during 1972-73 and 1973-74 it was only 38.5 and 43.4 per cent respectively. The Committee are concerned to note that the washery has suffered a loss of Rs. 136.51 lakhs during the period 1st April, 1971 to 31st March, 1973 on account of low utilisation of capacity.
	6.43	The low utilisation in the earlier years has been attributed to the reluctance of steel plants to use

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		the coal produced by this washery. This is yet another example of defective planning of the washery capacity.
	6.44	The Committee would like Government to take necessary remedial measures to improve the capacity utilisation of this washery to the maximum and to ensure that the washed coal, produced by the washery, is fully utilised. The Committee feel that firm agreements should be concluded with the consumers before establishing a washery on which heavy investments are made so as to avoid the problems of pricing and off-take of the finished products, which arise later on.
77	6.56	The Committee note that middlings and sinks, the by-products of washeries, have been used as fuel by Thermal Power Stations and that recently certain power plants have been rejecting sinks because of the adverse effects of the excessive shale and stone contained therein on the boiler. The Committee note that a Technical Committee had gone into the question of the use of middlings in 1972 and had recommended conversion of 2 stage washeries into 3 stage so that the middlings may be acceptable to the power plants. It is unfortunate that the problem was not given due attention till the middle of 1973 when the matters came to a head with the D.V.C. generation going down suddenly. A decision has now been taken to convert two stage washeries into three-stage and also to construct only three-stage washeries in future.
	6.57	The Committee consider that if the recommendation of the Technical Committee had been implemented expeditiously, the situation leading to the damage of boilers in power houses and consequential reduction in power generation

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		which adversely affected both industrial and agricultural production, could have been largely avoided.
	6.58	The Committee note that the original decision to have 2 stage washery was based on the recommendation of the Energy Survey Committee (1965). They are concerned to note that the recommendations of an expert Committee about the suitability of the 2 stage washeries, have been proved wrong by subsequent events. The Committee urge that an enquiry be made into the whole matter with a view to fixing responsibility and assessing the extent of losses suffered by the washeries as a result of under-utilisation of capacity, by the Power Stations in the shape of damage to equipment and cuts in power supply so as to obviate such lapses in future.
78	6.59	The Committee note that according to the Technical Committee on Coal Washeries, the estimated production of middlings|sinks which are by-products of the coal washeries, was about 3 million tonnes during 1969-70. The same Committee had estimated that the total production of middlings|sinks by the end of the Fourth Plan (1973-74) would be around five million tonnes which was expected to increase further to about 9 million tonnes by the end of the Fifth Plan (1978-79).
	6.60	The Committee would like Government to take effective steps to ensure that the middlings and sinks produced by the washeries in large quantities, are fully utilised.
79	6.61	The Committee have earlier referred to the scheme for manufacture of soft coke from middlings. The Committee consider that intensive research should be carried out with a view to improve the quality of the middlings and also

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		to find out scope for diversified uses of middlings and sinks produced by the washeries in case the Power Plants are not in a position to use them.
80	7.18	The Committee note that out of the production of 135 million tonnes of coal targetted for the Fifth Five Year Plan, 115 M.T. is likely to be produced from expansion, reconstruction and restructuring of the existing mines and the balance 20 m.t. would come from new mines, a substantial number of which could be put into operation in a relatively short time. They further note that the cost of equipment, needed for achieving the aforementioned target, is estimated at Rs. 400 crores. Out of this, machinery and equipment of about 1|3rd in value would have to be imported. In this connection the Committee would like to draw attention to the reports of the Committee on Public Undertakings (Sixty-Fifth Report Fourth Lok Sabha and Twenty-Fourth Report, Fifth Lok Sabha) on Mining and Allied Machinery Corporation Ltd. wherein they have pointed out that the existing capacity of 45,000 tonnes, developed in Mining and Allied Machinery Corporation for manufacture of machinery and equipment for coal mining, has been put to little use. The Committee consider that now that coal mining has been nationalised, it should be possible to have an integrated programme for manufacture of machinery and equipment for the coal mining industry. The machinery and equipment to be manufactured by Mining and Allied Machinery Corporation Ltd. should be such as is required by the industry and would make for the most efficient and economical working of the coal mines. The Committee consider that this challenge should

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		be taken as an opportunity by Government and the Undertaking to see that 100 per cent production and even more is achieved from the existing capacity of MAMC so as to meet fully the requirements of equipment and machinery for the coal mining industry and obviate the need for imports. The Committee would like that there should be close coordination and collaboration between the two sectors *viz.* Coal Mining Organisations and the MAMC so as to have a long-term perspective plan for the manufacture of coal mining machinery and equipment, best suited to the needs of this industry.
81	7.19	As regards equipment and machinery required for open-cast mining, the Committee understand that some capacity in this behalf has already been developed in Bharat Earth Movers and Heavy Engineering Corporation. The Committee need hardly point out that Heavy Engineering Corporation is another public sector Undertaking where capacity has not been fully put to use, as pointed out in the Fourteenth Report (Fourth Lok Sabha) of the Committee on Public Undertakings. The Committee see no reason why the Heavy Engineering Corporation should not make use of this opportunity to gear fully its manufacturing programme so as to meet in full the requirements of draglines, shovels etc. required for coal mining. Similarly Bharat Earth Movers should make every effort to see that motor graders and other equipments required for coal mining for open cast coal mining, are supplied to the maximum extent possible.
82	7.20	The Committee would also like examination in depth regarding the need for promotion of standardisation and variety reduction in Mining machinery equipment to bring about efficiency

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		and economy in coal mining operations. It is imperative to standardise certain popular sizes and types, which would give the benefits of quicker delivery and easier availability of spares. Once standardisation is decided, all the Undertakings which are at present engaged in the production of mining equipment should also be entrusted with the manufacture of spares, which should be regularly made available to the coal producing organisations, so that at no time the machinery is put out of commission for want of spare parts. It is also important that norms should be laid down for machine utilisation and adhered to strictly.
83	7.21	The Committee note that the percentage of breakdown time of equipment both in opencast and underground mines was quite heavy during 1971, 1972 and 1973. The percentage ranged from 20 to 27 per cent, in opencast mines and 8 to 29 per cent in underground mines. The Committee further note that the break-down in the machinery was on account of the fact that the equipment was mostly imported and there was a problem of the availability of spares.
	7.22	The Committee are concerned to note that in some cases, the machinery could not be put to use for want of spare parts. This indicates lack of advance planning for spare parts which are required frequently. The Committee urge that advance action should be taken to manufacture indigenously the requisite spare parts to the maximum extent possible, so that the costly machinery does not remain out of commission for lack of spare parts.
84	7.23	The Committee would further emphasise that in order to obviate loss in production due to breakdown of machinery, planned preventive

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		maintenance should be organised on a scientific footing in the light of experience gained. The system of maintenance in force in the plants should be examined and the weaknesses should be identified so that corrective steps are taken to remedy the state of affairs without any loss of time.
85	7.37	The Committee note that industrial explosives, which are one of the important inputs for coal production are produced presently by three factories in the private sector namely, the Indian Explosives Ltd., the Indian Detonators Ltd., and the Indian Oxygen Ltd. The present combined production of the three factories is 41,500 tonnes per annum out of which 15,000 tonnes are consumed by the coal mining industry.
	7.38	The Committee further note that the demand for explosives is expected to go up to 77,000 tonnes by the end of the Fifth Plan out of which the estimated share of the coal mining industry would be 35,000 tonnes. In order to meet the country's increased demand of explosives, the Central Government is considering proposals to set up an explosives factory in the Public Sector, with an annual capacity of 15,000 tonnes. It is also proposed to set up a nitro glycerine explosives plant with an annual capacity of 5000 tonnes in the Defence Sector. The Department has stated that both the projects will take about 4 years to reach the stage of production.
	7.39	The Committee are concerned to note that even after taking into account the production amounting to about 20,000 tonnes in the two new factories proposed to be set up, there would still be a gap of about 15,500 tonnes of explosives between the demand and supply thereof by the end of Fifth Plan period. It is also disturbing to note that the production of two new factories would be available after 4 years i.e. towards the end of

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		the Fifth Plan period. The Committee are unable to comprehend why no provision had been made so far for meeting the gap of about 16,000 tonnes of explosives, required in the country and why the two new factories which are stated to take 4 years to reach the stage of production, were not planned earlier so as to meet the growing needs of the coal mining and other industries to enable them to increase their production. The Committee would like the Government to examine this matter in depth and take suitable measures to expedite the setting up of the two new factories for explosives in the public sector as also to make provision for meeting the deficit of 15,500 tonnes in production by either expansion of the existing factories or by setting up new ones. The Committee recommend that the requirements of explosives for each year of the Fifth Plan period should be worked out by Government in detail and effective measures should be taken to ensure that the requisite quantity of explosives is available in time so as not to result in any interrruption in production of coal etc. during the Fifth Plan period.
86	7.56	The Committee note that the quality of coal is determined by grading of the coking and non-coking coals into various grades. The coking and blendable coals have been divided into nine grades *viz.*, Grade A, Grade B to H, and Grade HH. Similarly the non-coking coals in different regions have been classified into various grades, depending upon their ash content and the moisture content. The Committee regret to note that the coals of the Singareni and Assam coalfields have not been graded so far. They see no reason why the grading of coal in Singareni and Assam Coalfields should not have been done so long. The Committee recommend that the matter may be examined immediately and necessary action taken for grading of the coal from these fields.

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	7.57	The Committee further note that the National Coal Development Corporation (now Central Division) has a technical cell attached to its Sales Marketing Department which investigates the complaints regarding inferior quality of coal from the consumers and takes remedial action. Arrangements are also made at N.C.D.C. collieries for regular sampling and analysis of coal supplied to the major consumers with a view to keep a watch on quality. The Coal Mines Authority is now proposing to have quality control departments in other Divisions on more or less similar lines as in the case of the Central Division. The Committee also note that the Bharat Coking Coal Ltd., has a full-fledged quality control Department to ensure that coal of right quality is supplied to the consumers. B.C.C.L. proposes to expand this Department to further improve the quality control measures.
	7.58	The Committee would like the Coal Mines Authority to set up the quality control organisation in their various Divisions expeditiously so that coal of the right quality is supplied to various consumers and there are no complaints on that account.
	7.59	In this connection the Committee would also like to draw specific attention to the following recommendations of the Committee on Public Undertakings in their Sixty-Seventh Report (Fourth Lok Sabha) for early implementation by the Coal Producing Organisations:—
		"The Committee are of the view that top managements of public sector enterprises must regard quality control as an overall management function. They feel that the success of quality control depends to a large extent on the direct interest taken by the managements.

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		The Committee regret to note that some of the public enterprises *e.g.*, Heavy Engineering Corporation Ltd. and National Coal Development Corporation Ltd., do not organise in plant training in quality control for their staff. They are of the opinion that training in the field of quality control will give the staff in the quality control organisation an understanding of the theory and practice of the quality control techniques and procedures. They recommend that all undertakings should evolve in plant training in quality control. The Committee are surprised to note that some of the public sector enterprises *e.g.* Heavy Engineering Corporation Ltd., had not prepared any Manual on Quality Control for the the guidance of their staff. They are not sure whether they have any written instructions even. The Committee recommend that even undertakings which have issued detailed instructions on the subject of quality control from time to time should codify the same in the form of a Manual so that such instructions are available for study and reference at one place. Arrangements should also be made for inbuilt mechanism for periodical revision and review of the Quality Control Manuals.
		The Committee recommend that every public undertaking should introduce a systematic procedure for registration of consumers complaints and recording of the action taken on each complaint. Such a system would not only enable the undertakings to know the exact

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		number of complaints received in a year but also serve as an index of the success of the quality control measures adopted by an undertaking and show the trend of consumers reaction to various products. The Committee recommend that all manufacturing units in the public sector should establish an adequate organisation and facilities for feed back on consumers reaction to their products by conducting field surveys through independent and experienced organisations like the Management Institutes in order to find out reaction of consumers regarding their products and to take necessary corrective steps promptly and adequately for rectifying defects etc., not only of the products sold but also of future production".
87	7.60	The Committee regret to note that there have been complaints by the power stations regarding the quality of coal supplied to them, particularly the existence of extraneous matter like shale and stone in coal which damaged the grinding mills in the power stations and resulted in disrupting power supply to the consumers and higher maintenance costs to the power stations. The Committee would like to emphasise that very large quantities of coal would be consumed by power stations in the coming years and it is therefore imperative that they are supplied coal of the requisite quality by removing shales and stones therefrom. The Committee would like Government to evolve the best method for removal of shales and stones from the coal, whether by washing or by hand removal. In this connection the Committee would also refer to recommendations made by the Fuel Policy Committee regarding the washing of non-coking coal and would

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		urge Government to take necessary action to adopt the most economic method, after a full consideration of the techno-economic feasibility, so that coal of the requisite quality and quantity is supplied to the power stations and other consumers.
88	7.68	The Committee note that control on coal prices which was first introduced in 1944 was withdrawn by Government *w.e.f.* 24th July, 1967. Since then, the prices of coal have been revised from time to time, based on the prices agreed to by the Railways who are the biggest consumers of coal. These prices set the pattern of prices to be charged from various other consumers.
	7.69	The Committee consider that this system of pricing of coal is unscientific as the power stations are stated to have to pay more or less the same prices for coal, with 40 per cent ash content, as the steel plants and the Railways pay for good quality coal. The Committee regret to say that although in para 39 of their 33rd Report (Third Lok Sabha) on the then Ministry of Mines and Fuel, the Estimates Committee had recommended the grading of coal on its calorific value and fixing the prices accordingly, this was not implemented till April, 1974. It is only from April, 1974 that the prices of coal have been fixed after taking into account the useful heat value of each grade of coal. The Committee would like the Government to review the position in the light of experience gained of the working of the new prices and arrive at a scientific system of fixing of coal prices according to its calorific value, in consultation with the major consumers.
89	7.74	The Committee note that the Central Government had approved a scheme to set up coal dumps at suitable locations all over the country to ensure rational and equitable distribution of coal

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		and to achieve better turn round of wagons. The scheme envisages that ditribution of coal and coke to small industries, brick kilns and domestic consumers would be effected by moving coal in rakes from a single originating point to a single destination where coal would be received by an agency nominated by the State Government. The actual supplies of coal to the consumers will be made by road transport from the nearest coal dumps.
	7.75	The Committee understand that so far coal dumps have been set up at a few centres in Uttar Pradesh, namely Lucknow, Varanasi and Gorakhpur and suitable sites are being selected for opening dumps at Kanpur, Meerut and Agra. It has been stated that the coal dump scheme has not been implemented in other States as enough rail transport for the purpose has not become available.
	7.76	The Committee regret to note that the scheme of setting up coal dumps has not been implemented in many States and Union Territories for want of sufficient rail transport excepting for a few dumps set up in Uttar Pradesh. The Committee consider that this scheme would be useful for easing the transport problem inasmuch as coal can be moved to the dumps in block rakes during the slack reason of rail transport. Further under this scheme, there is immense scope for advance planning and coordination between the coal producers, the transport agencies and the State Governments to ensure availability of coal in sufficient quantity and its rational and equitable distribution to the consumers. It need hardly be emphasised that for successful implementation of this scheme, the recommendations made by this Committee in the earlier portions of this Report regarding precise assessment of demands and evolving a suitable distribution system, should

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		be implemented effectively. It is also of utmost importance that concerted measures are taken to provide rail transport for moving coal to the dumps expeditiously. Moreover the feasibility of using coastal shipping and inland waterways to the extent possible, should also be actively explored for implementation of this scheme.
90	7.77	The Committee would like particular care to be taken to ensure that coal of different grades and quality is properly segregated and that the consumers actually get the type of coal required by them. A careful assessment should be made of the working of dumps to see whether the creation of dumps has resulted in easy availability of coal to the consumers, avoidance of waste and pilferage, and economy in the cost involved. It is of the utmost importance that dumps are operated efficiently and economically, so that equitable distribution to the consumers is achieved and unduly high storage costs do not add to the burden of the consumer. The Committee would like to emphasise that sufficient stocks should be kept in difficult and inaccessible areas to meet the demands.