

CHAPTER 3

INFRASTRUCTURE

The strong resurgence of economic growth during 1988-89 has been supported by excellent performance in key infrastructure industries like steel, cement and fertilisers. However, growth in coal production, power generation, refinery throughput, etc. has been somewhat lower this year compared to 1987-88. A special effort had been mounted last year to maximise thermal power generation in order to offset the sharp fall in hydel power generation and meet the higher rural demand for power to run additional pump sets and other similar requirements arising from the drought. Accordingly, much of the

routine shutdown and backing down of thermal power plants for maintenance purposes was postponed till this year. Hence, the deceleration in growth of thermal power generation and its effect on coal production. However, there has been a sharp increase in hydel power generation this year and also somewhat lower growth in system demand. The off-peak deficiency in power availability has, therefore, declined. Despite the decline in refinery throughput adequate availability of petroleum products has been maintained during the year through higher imports.

TABLE 3.1
Trends in the Performance of the Infrastructure Sectors

Sl. No.	Item	Unit	1985-86	1986-87	1988-89£	April—December		Percentage change		
								1986-87	1987-88	1988-89*
						1987-88	1988-89	1985-86	1986-87	1987-88*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A. Energy										
1. Coal										
	(a) Production	Mn. Tonnes	154.2	165.8	179.8	124.2	132.8	7.5	8.4	6.9
	(b) Pit-head stocks (Year-end)	"	26.6	28.4	33.9	25.6	28.4	6.8	19.4	10.9
	(c) Despatches	"	151.0	158.7	170.3	123.8	133.3	5.1	7.3	7.7
2. Electricity Generated										
	(Utilities only)	Billion Kwh.	170.4	187.8	201.9	149.1	161.8	10.3	7.6	8.5
	(a) Hydel	"	51.0	53.9	47.4	36.6	43.7	5.7	-12.1	19.4
	(b) Thermal (incl. nuclear)	"	119.4	133.9	154.5	112.5	118.1	12.1	15.5	5.0
3. Petroleum										
	(a) Crude oil production	Mn. Tonnes	30.17	30.48	30.36	22.62	23.85	1.0	-0.4	5.4
	(b) Refinery throughput	"	42.91	45.70	47.75	35.31	35.46	6.5	4.5	0.4
B. Transport and Communications										
Railways										
	1. Revenue earning goods traffic (Mn. Tonnes)		258.55	277.75	290.21	210.13	218.07	7.4	4.5	3.8
	2. Cargo handled at major ports	"	119.51	124.37	133.78	95.69	107.14	4.1	7.6	12.0
Telecommunications										
	3. New Telephone connections provided (DELS)	000' Nos.	267.84	324.15	313.08	143.33	153.30	21.1	-3.4	7.0
C. Basic Industries (Production)										
	1. Saleable steel (M/Plants)	Mn. Tonnes	7.77	8.22	8.59	6.03	6.64	5.8	4.5	10.1
	2. Cement	"	33.13	36.59	39.51	28.82	32.28	10.4	8.0	12.0
	3. Fertilisers									
	(i) Nitrogenous	000' Tonnes	4328	5410	5466	3895	4914	25.0	1.0	26.2
	(ii) Phosphatic	"	1428	1660	1665	1126	1852	16.3	0.3	64.5

*April—December

£ Provisional.

3.2 Despite the severe drought condition which depressed the overall growth of the economy in 1987-88, most of the infrastructure sectors performed well and recorded substantial growth. Efficient management insulated these sectors to a large extent against the impact of drought. The coal sector improved on its previous year's performance in both production and despatches. Lignite production continued to maintain a steady trend. In the power sector, there was a drastic fall in the generation of hydel power because of the failure of the monsoon. Nevertheless, total generation of electricity increased over the previous year because of substantial improvement in thermal generation. As an off-shoot of the tight power situation in the year, generation of captive power by industrial units spurred considerably, easing to some extent, the pressure of demand on utilities. There was a marginal set-back in the output of crude petroleum compared to the previous year due to shortfall in offshore production. Refinery throughput was, however, better. Production of petroleum products went up and could meet the contingent increase in the demand from the agricultural sector in the wake of drought. The railways carried in 1987-88 more of revenue earning freight traffic than in 1986-87. Production of saleable steel and cement also increased. In spite of severe demand constraints, fertiliser industry maintained the previous year's production level.

3.3 The performance of the infrastructure sectors during the current financial year from April-December has remained buoyant on the whole though some sectors have recorded reduced rates of growth compared to the same in last year. Coal production during the first nine months of the current year was more than that of the corresponding period of last year; but there has been a deceleration in growth. Despatches also grew at a lower rate. Lignite production has gone up substantially. Growth in electricity generation during April-December this year has been higher compared to that of the corresponding period of last year. Bulk of the increase in electricity generation has come from hydel sector which has recorded an impressive growth this year as against a fall last year. Growth in thermal generation has decelerated mainly due to pre-ponement of maintenance shut-down and

backing down of some thermal plants in view of reduced demand particularly from the agricultural sector and the improved availability of hydel power. The Plant Load Factor (PLF) of thermal plants has also gone down. However, the estimated shortfall in off-peak availability of power has come down from 11.0 per cent in April-December last year to 7.8 percent in April-December this year. Production of crude petroleum which showed a declining trend in April-December last year has picked up in the current year. However, there has been no significant improvement in the refinery throughput and in the production of petroleum products. Total availability of POL has been maintained by higher imports to meet the increasing consumption demand.

3.4 There has been a deceleration in the growth of revenue earning freight traffic on railways, mainly because of lesser loading of foodgrains, iron ore and other general category goods. Growth in the volume of cargo handled by major ports was higher than the growth achieved in April-December last year. In the telecommunications sector the number of new telephone connections (DELS) provided in April-December this year was more than what was provided in the corresponding period of last year.

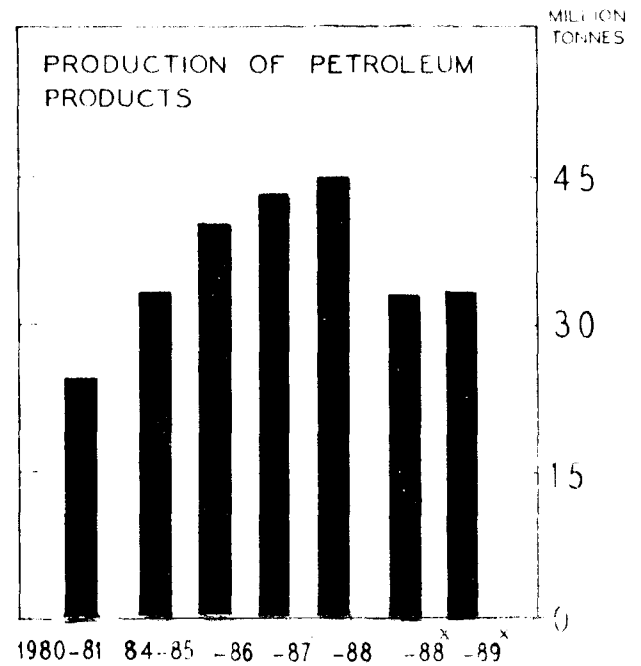
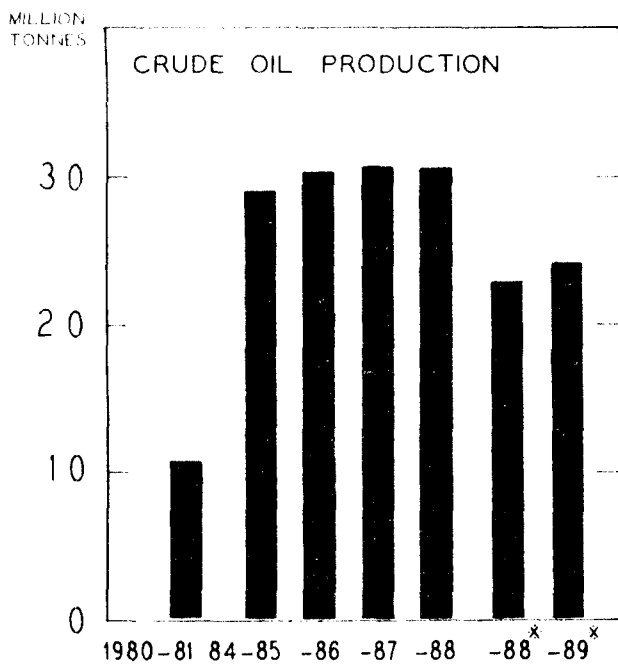
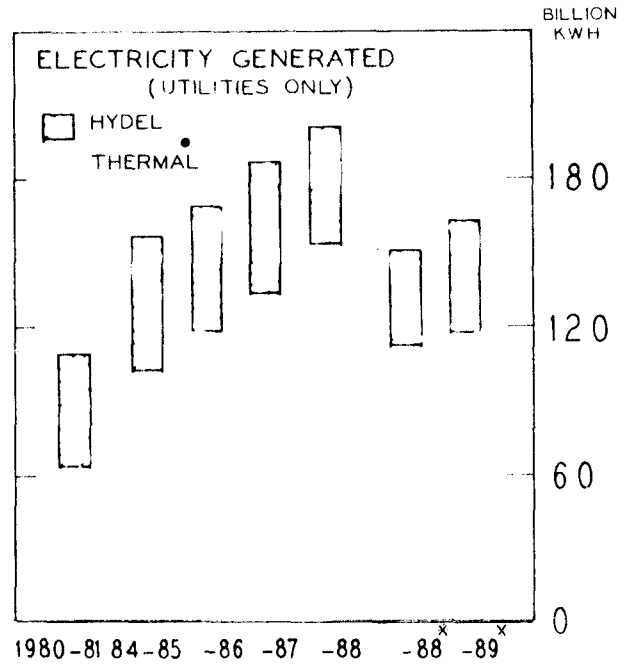
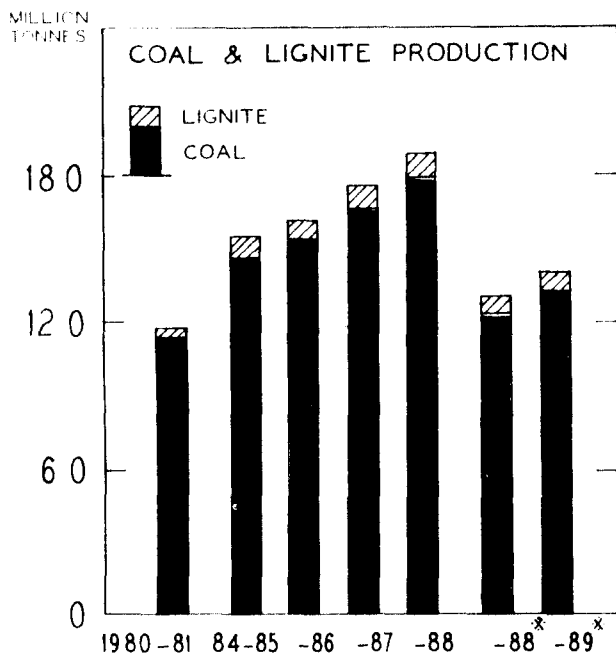
3.5 Production of fertilisers (Nitrogenous and Phosphatic) in April-December this year has recorded an impressive growth. The production of saleable steel and cement has also recorded a growth higher than that of the corresponding period of last year.

Energy

Coal

3.6 Production of coal in 1987-88 at 179.9 million tonnes was 8.4 per cent more than the previous year's production, but short of the target of 183.5 million tonnes by 2 per cent. Coal India Ltd. (CIL) performed well by producing 159.1 million tonnes against a target of 158.0 million tonnes and achieved a growth of 9.9 per cent over the previous year. But there were shortfalls in production by Singareni Collieries Company Ltd (SCCL) and the captive mines of Tata Iron and Steel Company, (TISCO), Indian Iron and Steel Company (IISCO), and Damodar Valley

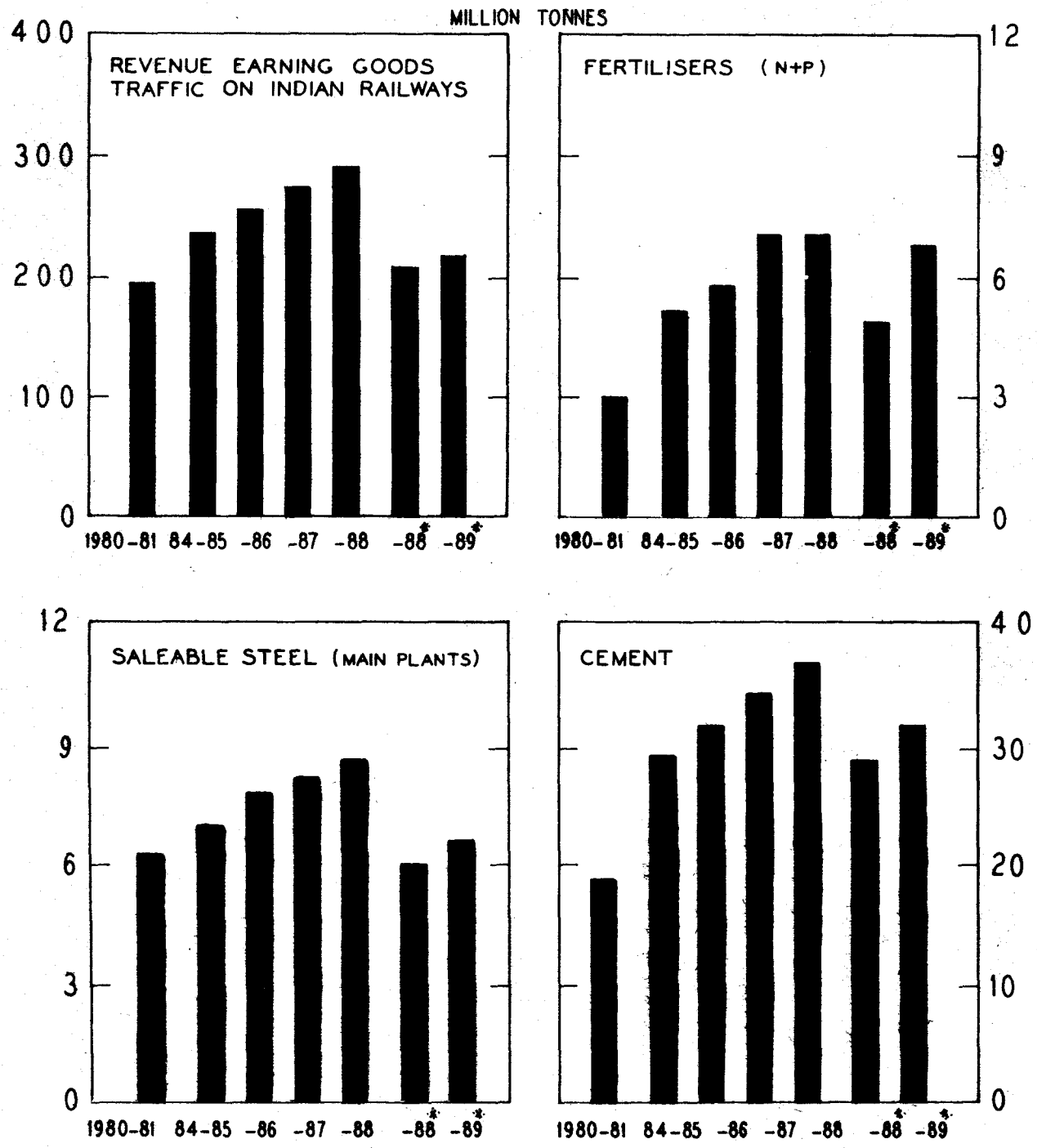
PERFORMANCE OF INFRASTRUCTURE SECTORS



* APRIL - DECEMBER
 • INCLUDING NUCLEAR

MINISTRY OF FINANCE, ECONOMIC DIVISION

PERFORMANCE OF INFRASTRUCTURE SECTORS



* APRIL - DECEMBER

MINISTRY OF FINANCE, ECONOMIC DIVISION.

Corporation (DVC). SCCL's production at 16.4 million tonnes was less than the previous year's production of 16.6 million tonnes and short of the target of 20 million tonnes by 18 per cent, mainly because of labour unrest leading to a major strike for 11 days in February, 1988. Demand for coal projected for the year was 192.05 million tonnes.

The demand-production gap was to be filled by import of 2.8 million tonnes of superior quality metallurgical coal required by steel plants and by drawing on pithead stocks. Actual import of metallurgical coal at 3.49 million tonnes was, however, higher than what was projected originally.

TABLE 3.2
Trends in Coal Sector

Sl. No.	Item	1985-86	1986-87	1987-88£	(Million Tonnes)					
					April-December£		Percentage change			
					1987-88	1988-89	1986-87	1987-88	1988-89*	
1	2	3	4	5	6	7	8	9	10	
1.	Production									
	(i) CIL	134.1	144.8	159.1	108.2	116.3	8.0	9.9	7.5	
	(ii) SCCL	15.7	16.6	16.4	12.9	13.2	5.7	-1.2	2.3	
	(iii) Others	4.4	4.4	4.3	3.1	3.3	-	-2.3	6.5	
	TOTAL	154.2	165.8	179.8	124.2	132.8	7.5	8.4	6.9	
2.	Pit-head stocks (Year-end)	26.6	28.4	33.9	25.6	28.4	6.8	19.4	10.9	
3.	Despatches	151.0	158.7	170.8	123.8	133.3	5.1	7.3	7.7	
4.	Lignite (production)	8.1	9.6	11.2	7.0†	8.4†	18.5	16.7	20.0	

*April-December.

-No Change

£ Provisional.

† Relates to Neyveli Lignite Corporation only.

3.7 Total despatches of coal during the year at 170.8 million tonnes was 7.3 per cent more than the previous year's despatches of 158.7 million tonnes. CIL alone despatched 150.12 million tonnes of coal in the year as against 138.15 million tonnes in 1986-87. Despite this increase in despatches, the pithead stocks of coal at the close of the year touched a record level of 33.9 million tonnes which was 19.4 per cent higher than the year-end stocks of 28.4 million tonnes in 1986-87. The higher built-up of pithead stocks was attributed to mismatches between production and rail movement, especially in coal-fields which do not have adequate rail movement facilities.

3.8 CIL improved its productivity (measured in terms of output of raw coal per man shift-(OMS)) in 1987-88. It achieved an overall OMS of 1.08 tonnes against 0.98 tonnes in 1986-87. However, there was a nominal fall in the productivity achieved by SCCL—from 0.97 tonnes in 1986-87 to 0.95 tonnes in 1987-88. Troubled industrial relation in the coal industry continues to be a matter of concern. Man-days lost due to labour unrest in CIL in 1987-88 was 9.53 lakhs as against 6.85 lakhs in 1986-87. In SCCL, there was nearly a four-fold increase in the man-days lost between

1986-87 and 1987-88 from 5.67 lakhs to 21.45 lakhs. Trend in the first nine months of the current year, however, indicates some improvement in labour relations in both the coal companies. There have been slippages in the implementation of coal projects. Out of 18 ongoing projects, 10 are on schedule and the remaining 8 are delayed mainly due to non-acquisition of land and non-receipt of machinery and equipment from indigenous suppliers.

TABLE 3.3

Estimated Demand/Supply of Coking Coal for the Steel Industry

Particulars	(Million Tonnes)		
	1985-86	1986-87	1987-88
1. Total requirement	13.90	17.62	17.57
2. Actual supplies (domestic)	12.91	12.27	12.11
3. Imported coal received	2.45	2.56	3.49

3.9 The target set for production of coal by CIL during the current year is 196.28 million tonnes. Actual production in the first nine months of the year (April-December) was 132.8 million tonnes which is 7.5 per cent higher than the production during the corresponding period of last year.

Corresponding growth last year at 10.7 per cent was much higher. While CIL, the major producer of coal, continued to perform well and produced 116.3 million tonnes, production by SCCL increased only marginally mainly because of labour unrest. Total despatches of coal during the period April - December, 1988 at 133.3 million tonnes was 7.7 per cent higher than the total despatches of 123.8 million tonnes during the corresponding period of last year. Despite the increase in despatches, pithead stocks of coal as on December 31, 1988 was higher at 28.4 million tonnes as compared to 25.6 million tonnes a year ago.

3.10 CIL's production of metallurgical grade coking coal in 1987-88 at 22.10 million tonnes, was 6.3 per cent lower than the previous year's production of 23.6 million tonnes. Washed coal production by CIL washeries during the year estimated at 8.25 million tonnes was 2.7 per cent higher than the previous year's production of 8.03 million tonnes but short of the target by 15 per cent. During the current year, there was a short fall in the production of metallurgical grade coal by CIL in the first nine months (April—December). At 14.44 million tonnes, production was 3.9 per cent less than the actual production in the corresponding period of last year. Production of washed coal in CIL washeries at 6.45 million tonnes was 5.4 per cent higher as compared to the production of 6.12 million tonnes in the corresponding period of last year. Short supply of prime coking coal required by steel plants has been a persisting problem in the coal sector due to the delinking of several mines which were not matching quality specifications. Import of superior quality coking coal for the use of steel plants was 3.49 million tonnes in 1987-88 as against 2.56 million tonnes in 1986-87. Import of coking coal in the current year is likely to exceed last year's level because of the short fall in domestic production.

Lignite

3.11 Production of lignite in 1987-88 at 11.2 million tonnes, was 16.7 per cent more than the previous year's production of 9.6 million tonnes. Production by Neyveli Lignite Corpora-

tion (NLC) at 10.2 million tonnes was 10.9 per cent above the target of 9.2 million tonnes and 18.6 per cent more than the production of 8.6 million tonnes in 1986-87. Production from the lignite mines of Gujarat Mineral Development Corporation (GMDC) was 1.0 million tonnes as against 0.9 million tonnes in 1986-87.

3.12 Trend in the production of lignite continues to be firm during the current year also. Production from NLC during April—December, 1988 at 8.4 million tonnes was 20 per cent more than the production of 7.0 million tonnes during the corresponding period of last year. GMDC is also expected to augment its production. NLC has recorded significant achievements in the fields of power generation, fertiliser production and also in the production of coke.

Electricity

3.13 Generation of electricity (utilities only) in 1987-88 at 201.9 billion KWH recorded a growth of 7.6 per cent over the previous year, which was lower than the growth rates achieved in the two preceding years—8.6 per cent in 1985-86 and 10.3 per cent in 1986-87. (Table 3.4). Because of the failure of monsoon, generation of hydel power in the year at 47.4 billion KWH declined by 12.1 per cent from previous year's level and fell short of the target of 56.4 billion KWH by 16.0 per cent. However, this shortfall in hydel generation was more than made up by augmenting thermal generation substantially. At 154.5 billion KWH thermal (including nuclear) power generation in the year was 15.5 per cent up over the previous year and exceeded the target of 148.6 billion KWH by 4.0 per cent. The overall generation of power in the year fell short of the target of 205 billion KWH marginally by 1.5 per cent. Additional generation capacity created in 1987-88 (in utilities) was 4981 MW against the target of 4801.5 MW. Performance of the power sector was good during the year viewed against the backdrop of the pressure of demand and constraints caused by the depressing drought conditions. The overall shortage of off-peak power supply was contained at a manageable level of 10.9 per cent as against 9.4 per cent in 1986-87.

TABLE 3.4

Trends in the Power Sector (Utilities only)

Sl. No.	Item	1985-86	1986-87	1987-88£	April—December£		Percentage change		
					1987-88	1988-89	1986-87	1987-88	1988-89*
							1985-86	1986-87	1987-88*
1	2	3	4	5	6	7	8	9	10
1.	Additional capacity commissioned/rolled (MW)	4184	2488	4981	2673.4	1432.0	-40.5	100.2	-46.4
2.	Power Generation (Billion KWH)	170.4	187.8	201.9	149.1	161.8	10.3	7.6	8.5
	(i) Hydel	51.0	53.9	47.4	36.6	43.7	5.7	-12.1	19.4
	(ii) Thermal (incl. nuclear)	119.4	133.9	154.5	112.5	118.1	12.1	15.5	5.0
3.	Plant Load Factor of Thermal Plants (per cent)	52.4	53.2	56.5	55.0	52.9	-	-	-
4.	Estimated deficit in power availability (per cent)	7.9	9.4	10.9	11.0	7.8	-	-	-

*April—December

£ Provisional.

3.14 In the wake of the tight power situation in 1987-88, many industrial units have set up captive power plants, commissioning of which partly spilled over to the current year. This has helped to ease the pressure of demand on power generation in utilities to some extent. Generation of power in non-utilities (captive plants) in 1987-88 at 15.3 billion KWH was 7.0 per cent higher than the previous year's generation of 14.3 billion KWH.

3.15 Total generation of power in April-December this year was 161.8 billion KWH as compared to 149.1 billion KWH in the corresponding period of last year, recording a growth of 8.5 per cent which was higher than the growth of 7.6 per cent achieved in the same period of last year. Hydel generation improved by 19.4 per cent as against a decline of 11.7 per cent last year but growth in thermal (including nuclear) generation at 5.0 per cent was much lower than last year's growth of 15.5 per cent. The deceleration was entirely in the thermal sector mainly due to pre-ponement of planned maintenance shutdown of plants and backing down of some units keeping in view the improved availability of hydel power for which the State Electricity Boards have an obvious preference. The estimated level of deficiency in power availability (barring peak load

shortages) during the period April-December this year was only 7.8 per cent, which is lower than the corresponding deficiency of 11.0 per cent estimated for last year. Growth in demand for power so far during the current year has been somewhat subdued as compared to last year mainly because the pressure of demand for lift irrigation has eased following good monsoon and also because of the increased dependence of the industry sector on captive power.

3.16 The PLF of thermal plants had reached a record level of 56.5 per cent in 1987-88. Average PLF of thermal plants in April—December this year had drifted back to 52.9 per cent as compared to 55.0 per cent during the corresponding period of last year. While the Central Sector plants maintained an overall average PLF of 60.6 per cent this year as compared to 62.0 per cent in the corresponding period of last year, PLF of NTPC declined from 70.2 per cent to 64.6 per cent mainly because of the pre-ponement of maintenance shutdown of plants. Average PLF of State Sector plants declined to 49.1 per cent from last year's level of 51.9 per cent. Only eight States—Andhra Pradesh, Karnataka, Tamil Nadu, Punjab Gujarat, Maharashtra, Uttar Pradesh and West Bengal maintained the PLF more than 50 per cent during April—December, 1988.

TABLE 3.5
Organisation-wise details of PLF Target/Actual Achievement during the year 1987-88 and April-December, 1988

Sl. No.	Board/Undertaking/ Sector	P.L.F. (Percentages)		
		Actual for 1987-88	April-December, 88* Target	Actual
1	2	3	4	5
P L F above 50%				
1.	Andhra Pradesh State Electricity Board	76.2	72.6	64.7
2.	Karnataka Power Corporation	64.5	64.1	61.8
3.	Tamil Nadu State Electricity Board	68.7	59.3	60.4
4.	Punjab State Electricity Board	71.5	70.7	55.3
5.	Gujarat State Electricity Board	60.0	57.3	52.6
6.	Maharashtra State Electricity Board	57.0	52.0	51.6
7.	Uttar Pradesh Electricity Board	47.1	47.5	51.5
8.	West Bengal Power Development Corporation	52.4	51.6	50.4
PLF 40% to 50%				
1.	Madhya Pradesh State Electricity Board	53.3	49.3	47.5
2.	Rajasthan State Electricity Board	71.5	66.0	44.4
3.	Delhi Electricity Supply Undertaking	49.1	69.1	41.7
PLF below 40%				
1.	Haryana State Electricity Board	40.6	40.3	39.1
2.	Bihar State Electricity Board	33.0	31.0	36.2
3.	West Bengal State Electricity Board	38.6	39.6	35.8
4.	Orissa State Electricity Board	32.5	35.1	30.2
5.	Assam State Electricity Board	31.0	33.4	27.6
6.	Durgapur Projects Limited (DPL)	31.4	31.6	23.0
P L F : Central Sector (Total)				
		63.3	58.2	60.6
1.	Neyveli Lignite Corporation	69.8	60.5	70.9
2.	National Thermal Power Corporation	71.2	60.0	64.6
3.	Damodar-Valley Corporation	39.9	49.7	39.4
P L F : Private Utilities (Total)				
		67.6	66.9	66.1

*Provisional.

3.17 There has been a marked structural change in the power sector of the country in recent years; with the hydel-thermal mix of power generation shifting steadily in favour of thermal generation. Share of hydel power in the total generation has declined from 42.1 per cent in 1980-81 to 34.3 per cent in 1984-85 and further to 23.5 per cent in 1987-88. In the current year upto the end of December, 1988, hydel generation has slightly improved its share to 27.0 per cent because of good monsoon. There has been a slow down in commissioning of additional hydel generation capacity in recent years, due mainly to consideration of environmental factors and long gestation period of hydel projects. This shift in the hydel-thermal mix has cost and pricing implications in the power sector as hydel power is relatively cheaper and its source is renewable.

3.18 Additional power generation capacity targeted for the current year is 4994.5 MW. Capacity scheduled for commissioning during the period April-December this year was 2942 MW—2194.5 MW thermal, 512.5 MW hydel and 235 MW nuclear. Actual capacity rolled/commissioned was only 1432 MW—1240 MW thermal and 192 MW hydel, achieving only 48.7 per cent of the target. There have been considerable slippages in hydel and nuclear generation which will have to be made up in the coming months.

TABLE 3.6
Power Generation Capacity : Targets/Achievements

Sector	Commissioned/ Rolled		April -December, 1988			
	Actual during 1987-88		Scheduled		Commissioned/ Rolled	
	No.	Capacity (MW)	No.	Capacity (MW)	No.	Capacity (MW)
Thermal	14	3912	17	2194.5	5	1240 (56.5)
Hydel	37	1069	13	512.5	5*	192 (37.5)
Nuclear	1	235
TOTAL	51	4981	31*	2942	10*	1432 (48.7)

*Excluding 4 nos (2 MW) Mini/Micro hydel

Note : Figures in brackets indicate percentages to the capacity scheduled for April-December, 1988.

Petroleum

3.19 Production of crude petroleum in 1987-88 at 30.36 million tonnes was marginally lower

than the previous year's production by 0.4 per cent and also short of the target of 30.46 million tonnes. Oil and Natural Gas Commission (ONGC) performed well by producing 27.91 million tonnes of crude oil exceeding the target of 19.92 million tonnes in off-shore production and achieving the target of 7.7 million tonnes in onshore production. But on—shore production by Oil India Ltd. (OIL) at 2.45 million tonnes was lower than the previous year's level and fell short of the target of 2.84 million tonnes. Total refinery throughput in the year at 47.75 million tonnes was higher than previous year's achieve-

ment of 45.70 million tonnes and exceeded the target of 46.95 million tonnes. Average capacity utilisation of the refineries (measured in terms of actual crude throughput expressed as percentage of installed capacity) was 98.0 per cent in 1987-88 as against 96.1 per cent in 1986-87. Growth in the production of petroleum products (POL) in 1987-88 over the previous year was 4.6 per cent which was lower than the growth of 7.2 per cent achieved in 1986-87. Production of natural gas in 1987-88 at 11.47 billion cubic metres recorded a growth of 16.4 per cent over the previous year.

TABLE 3.7

Trends in Petroleum Sector

Sl. No.	Item	1985-86	1986-87	1987-88£	April-December£		Percentage change		
					1987-88	1988-89	1986-87	1986-87	1988-89*
							1985-86	1986-87	1987-88*
1	2	3	4	5	6	7	8	9	10
1.	Crude Oil Production	30.17	30.48	30.36	22.62	23.85	1.0	-0.4	5.4
	(i) On-shore	9.35	9.86	10.19	7.64	8.03	5.5	3.3	5.1
	(a) ONGC	6.69	7.24	7.74	5.81	6.21	8.2	6.9	6.9
	(b) OIL	2.65	2.62	2.45	1.83	1.82	-1.1	-6.5	-0.5
	(ii) Off-shore (ONGC)	20.82	20.62	20.17	14.98	15.82	-1.0	-2.2	5.6
2.	Refinery Throughput	42.91	45.70	47.75	35.31	35.46	6.5	4.5	0.4
3.	Production of Petroleum Products	39.88	42.76	44.73	33.00	33.00	7.2	4.6	no ch.
4.	Natural Gas (Billion Cubic Metres)	8.13	9.85	11.47	8.31	9.64	21.2	16.4	16.0

*April-December

£Provisional.

3.20 Trend in the production of crude oil so far during the current year has been encouraging. Production during the period April—December, 1988 at 23.85 million tonnes was 5.4 per cent more than the production achieved during the corresponding period of last year. This entire increase in production has come from ONGC which recorded a growth of 5.6 per cent in off-shore production and 6.9 per cent in on-shore production over the corresponding period of last year. On-shore production of crude oil by OIL just maintained the last year's level. Production target of crude oil for 1988-89 is 32.18 million tonnes. About 74 per cent of this target has been achieved in the first nine months of the year.

3.21 Refinery throughput and production of petroleum products (POL) during April-December this year were nearly stagnating at levels reached in the corresponding period of last year. Refinery

throughput was 35.46 million tonnes as against 35.31 million tonnes in the last year. Capacity utilisation of the refineries, during April—December this year at 96.6 per cent remained almost at last year's level of 96.5 per cent.

3.22 Production of petroleum products (POL) in April-December this year at 33.0 million tonnes just maintained the production level reached in April-December last year. Corresponding growth in the production of POL achieved in April-December last year was much higher at 5.8 per cent. The shortfall this year was mainly in refineries located in Assam, operations of which were affected by successive floods, shortage of power supply, bundhs and low delivery of crude. Fire accidents in Mathura and Bombay refineries also affected production. The target set for production of POL for the current year is 48.90 million tonnes. Achievement in the first nine months was only 67 per cent and it is likely

that the production of POL in the current year may fall short of the target. However, shortfall in production of POL has not affected availability, which has been maintained through higher import. Import of POL in April-December this year was 4.53 million tonnes; 55.7 per cent more than the import of 2.91 million tonnes in April-December, 1987. However, import of crude oil during the period declined marginally by 1.7 per cent—from 13.35 million tonnes last year to 13.12 million tonnes this year.

3.23 A significant development in the hydrocarbon sector in recent years is the increasing use of natural gas for both energy and non-energy purposes. In the energy sector it is emerging as one of our major energy resources. Output of natural gas in 1987-88 at 11.47 billion

cubic metres recorded a growth of 16.4 per cent over the previous year as against 21.2 per cent in 1986-87. Production of natural gas had exceeded the target of 7.78 billion cubic metres in 1986-87 but fell short of target of 15.17 billion cubic metres in 1987-88. Utilisation of gas was higher in 1987-88 at 7.95 billion cubic metres as against 7.07 billion cubic metres in 1986-87. The gap between utilisation and availability of natural gas has been persisting. Production of natural gas during the current year upto the end of December was 9.64 billion cubic metres which was 16.0 per cent higher than the production of 8.31 billion cubic metres during the corresponding period of last year. Production target of natural gas for the current year is 14.45 billion cubic metres. Achievement till the end of December this year was 66 per cent.

TABLE 3.8
Consumption of Petroleum Products*

Sl. No.	Item	(Million Tonnes)								
		1985-86	1986-87	1987-88£	April-December£		Percentage change			
					1987-88	1988-89	1986-87	1987-88	1988-89**	
1	2	3	4	5	6	7	8	9	10	
1.	Light Distillates : of which	6.77	7.41	7.55	5.39	6.27	9.5	1.9	16.3	
	(a) Naphtha	3.11	3.25	2.85	1.98	2.45	4.5	-12.3	23.7	
	(b) L.P.G.	1.24	1.50	1.69	1.21	1.43	21.0	12.7	18.2	
	(c) Mogas	2.28	2.51	2.81	2.07	2.25	10.1	12.0	8.7	
2.	Middle Distillates : of which	23.95	25.66	28.01	20.49	21.79	7.1	9.2	6.3	
	(a) Kerosene	6.23	6.65	7.23	5.30	5.68	6.7	8.7	7.2	
	(b) High Speed Diesel Oil	14.89	16.01	17.66	12.91	13.64	7.5	10.3	5.7	
3.	Heavy Ends of : which :	10.15	10.59	10.86	7.87	8.36	4.3	2.5	6.2	
	Fuel Oil	7.90	8.05	8.14	5.98	6.21	1.9	1.1	3.8	
	TOTAL	40.87	43.66	46.42	33.75	36.42	6.8	6.3	7.9	

*Excluding RBF.

**April-December.

£ Provisional.

3.24 The Seventh Five Year Plan has envisaged annual growth rates of 6.3 to 6.5 per cent in production and 6.4 per cent in consumption of POL. Average annual growth rate in the first three years of the Plan—1985-86 to 1987-88 was 10.5 per cent in production and 6.2 per cent in consumption (Table 3.8). In 1987-88, while production of POL increased by 4.6 per cent over the previous year, consumption increased by 6.3 per cent. During April-December this year, while there was no increase in the production of POL over the corresponding period of last year, consumption has gone up by 7.9 per cent widening further the gap between

domestic availability and domestic demand necessitating increased imports. Among the light distillates, next to LPG, it was mogas which has recorded the highest growth rate in consumption in recent years—9.2 per cent in 1985-86, 10.1 per cent in 1986-87 and 12.0 per cent in 1987-88. Average annual growth rate of consumption of mogas in the first three years of the Seventh Plan was 10.5 per cent. Increase in mogas consumption in April-December this year over the corresponding period of last year was 8.7 per cent. Such a high growth rate of consumption of mogas, caused mainly by a spectacular increase

in the number of petrol-consuming motor cars and three and two-wheelers on the road in recent years, is a matter of concern. There is an urgent need for a renewed and concerted effort to speed up research on energy saving devices in petrol-using vehicles and expanding the public transport system, particularly the metro and urban transport systems.

Conservation of Energy

3.25. Energy consumption in India has been steadily going up; although in per capita terms it is still much lower than that of developed countries. The growth has been more in commercial energy (coal, petroleum and electricity) than in non-commercial energy (firewood, animal dung, etc.) which is gradually losing its dominant position in the total energy consumption. The elasticity coefficient of consumption of commercial energy with respect to GDP between 1960-61 and 1982-83 has been estimated at 1.62. Though the elasticity has declined marginally to 1.45 in the first two years of the Seventh Plan, the growth of Indian economy still continues to be energy intensive. In 1987-88, while the growth in GDP was 3.6 per cent, consumption of petroleum products increased by 6.3 per cent and demand for electricity by 9.7 per cent. The GDP elasticity of coal consumption has, however, remained below unity. Increasing dependence on hydro-carbons for energy needs is a matter of serious concern when viewed against the backdrop of depleting fossil fuel resources and rising costs of production. There is potential as well as urgent need for energy conservation through better house keeping, introduction of more fuel efficient engines, retrofitting of existing boilers with fuel efficient ones and replacement of oil with coal and other fuels wherever possible. There is considerable scope for development of alternative fuels like soft coke, biogas, solar energy, etc. Energy audit and motivating energy saving by appropriate incentives are two areas where efforts so far made have been only marginal. The Petroleum Conservation Research Association which has been engaged in this line since 1976 has so far been able to achieve a saving of petroleum products worth an estimated total of Rs. 450 crores. Much more remains to be done.

Renewable Sources of Energy

3.26 Considerable progress has been made in the country for the development of new and renewable sources of energy. Major thrusts are on programmes relating to biogas, solar energy, wind power and biomass. Under the National Project for Biogas Development, over 10.5 lakhs biogas plants have been set up so far in the country. Annual generation of biogas from these plants is estimated to be equivalent to about 37.1 lakh tonnes of fuel wood valued at Rs. 148.5 crores. In 1987-88, 1.7 lakh plants were set up against a target of 1.2 lakh plants and the target for the current year is fixed at 1.5 lakh plants. Under the programme for introducing improved and fuel efficient chulhas, 15.18 lakh chulhas were set up in 1987-88. An equal number is targeted to be installed during the current year. Considerable progress has been achieved in the solar thermal extension programme. Physical achievements under this programme include distribution of 4236 solar water heaters, 7123 solar stills, about 96,000 solar cookers, setting up of about 10,000 streetlighting systems in villages using solar photovoltaic technology and a few experimental solar power plants. Development of amorphous silicon solar cell technology has been taken up as one of the technology missions and a pilot plant to produce amorphous photovoltaic modules is under construction. Under the wind energy development and demonstration programme, 2262 wind pumps and 6 wind power generation stations of aggregate capacity of 6 MW have been set up so far. About 200 biomass gasifier systems which can achieve a diesel replacement of 65—70 per cent each have been installed under demonstration programme. There is considerable potential for harnessing energy from micro hydel systems, ocean and urban and agricultural wastes. Efforts are being made to tap these resources.

Transport and Communications

Railways

3.27 After two successive years of good performance, the freight traffic originating on Indian Railways drifted to a lower growth in 1987-88. Total originating freight traffic handled by the railways in the year was 318.4 million tonnes

(including 28.2 million tonnes of non-revenue earning traffic) as against 307.3 million tonnes (including 29.5 million tonnes of non-revenue earning traffic) in 1986-87. Growth in revenue earning freight traffic achieved during the year at 4.5 per cent was lower than the achievements of 9.4 per cent in 1985-86 and 7.4 per cent in 1986-87. Because of lower growth in freight traffic, growth in transport output measured in terms of Net Tonne Kilometres (NTKMs) of revenue earning freight traffic also decelerated in 1987-88. At 222.5 billions, revenue earning NTKMs in 1987-88 was only 3.9 per cent more than that of the previous year's 214.1 billions. Growth in NTKMs in 1986-87 was as high as 8.9 per cent. Even at this decelerated growth,

total freight traffic handled by the railways in 1987-88 exceeded the target of 316 million tonnes-290 million tonnes of revenue earning and 26 million tonnes of non-revenue earning. Achievement in revenue earning NTKMs also was more than the targeted 214 billions. The railways performed well during the year despite disruptions in rail movement in the Eastern and North-Eastern regions because of heavy rains and extensive breaches of track and lesser offer of traffic by certain sectors. As compared to the previous year, loading of iron ore, fertilisers and other general category goods was lower in 1987-88. Loading was substantially higher in coal, cement and POL.

TABLE 3.9
Performance of Railway Sector

Sl. No.	Item	1985-86	1986-87	1987-88£	April-December£		Percentage change		
					1987-88	1988-89	1986-87	1987-88	1988-89*
1	2	3	4	5	6	7	8	9	10
1.	Total revenue earning freight traffic (million tonnes)	258.55	277.75	290.21	210.13	218.07	7.4	4.5	3.8
	(i) Coal	101.64	109.45	119.84	87.03	93.60	7.7	9.5	7.5
	(ii) Raw materials for steel plants (excl. coal)	22.99	24.04	24.86	18.02	18.81	4.6	3.4	4.4
	(iii) Pig iron & finished steel from steel plants	8.85	9.48	9.87	6.91	7.38	7.1	4.1	6.8
	(iv) Iron ore for exports	12.54	14.17	13.04	9.81	9.66	13.0	-8.0	-1.5
	(v) Cement	17.96	19.79	22.32	16.02	18.45	10.2	12.8	15.2
	(vi) Foodgrains	24.10	29.00	30.13	21.87	18.39	20.3	3.9	-15.9
	(vii) Fertilisers	13.62	14.53	13.18	9.62	11.83	6.7	-9.3	23.0
	(viii) POL	18.63	19.85	21.69	16.04	16.44	6.5	9.3	2.5
	(ix) Balance "other goods"	38.22	37.43	35.28	24.81	23.51	-2.1	-5.7	-5.2
2.	Net tonne kilometres (billion)	196.6	214.1	222.5	161.2	162.0	8.9	3.9	0.5
3.	Net tonne kilometres per wagon per day (BG)	1296	1420	1449	1393	1411	9.6	2.0	1.3
4.	Passenger traffic originating (million)	3433	3594	3792	2837	2608	4.7	5.5	-8.1
5.	Passenger kilometres (billion)	240.6	256.5	269.4	202.6	190.3	6.6	5.0	-6.1

* April-December £ Provisional

3.28. Total revenue earning freight traffic originating on railways during April—December this year was 218.07 million tonnes as against 210.13 million tonnes in the corresponding period of last year, recording a growth of 3.8 percent. However, there has been a deceleration of growth in the current year as compared to a growth of 5.4 per cent achieved in April—December last year. Freight loading of iron ore for export, foodgrains and other general category goods was lower than

last year's level. There has been a steep fall of 15.9 per cent in the loading of foodgrains in April—December this year as compared to the corresponding period of last year, mainly because of depleted stocks and increase in the road movement of foodgrains. NTKMs of revenue earning freight traffic improved marginally from 161.2 billion in April—December, 1987 to 162.0 billion in April—December this year.

3.29 Passenger traffic originating on Indian Railways recorded an impressive growth of 5.5 per cent in 1987-88—3792 million as against 3594 million in 1986-87. Growth in passenger traffic was 3.0 per cent in 1985-86 and 4.7 per cent in 1986-87. Bulk of this increase was in the short distance suburban system. Growth of passenger traffic on suburban railways was 9.4 per cent in 1987-88, which was more than double the growth of 4.6 per cent recorded in 1986-87. Because of this suburban orientation of the growth in passenger traffic, passenger kilometres (PKMs) increased only by 4.5 per cent in 1987-88. An annual growth rate of 3 per cent in railway passenger traffic has been anticipated in the Seventh Five Year Plan but the actual average growth in the first three years of the Plan was 4.7 per cent per annum. This increased pressure of demand on passenger traffic has been met without affecting the railways' transport capacity for freight traffic, through adoption of suitable strategies for dealing with the growth in long distance and short distance passenger traffic.

3.30 There has been some relaxation in the pressure of demand on passenger traffic during April—December this year. Passenger traffic (originating) during the period was 2608 million as against 2837 million in the corresponding period of last year marking a decline of 8.1 per cent as compared to an increase of 3.4 per cent recorded in April—December, 1987. Passenger KMs also declined by 6.1 per cent in April—December this year compared to the corresponding period of last year.

3.31 Total Route—KMs on Indian Railways at the end of 1984-85 was 61850. The Seventh Plan envisages adding another 1964 RKMs of track including 822 KMs of new lines and 1142 KMs of doubling of existing tracks by the end of 1989-90. Achievement till the end of last year was 913 RKMs—368 KMs. of new lines and 545 KMs of doubling, which works out to about 46 per cent of the Plan target. Railways commissioned 188 KMs of new lines and doubled 202 KMs of existing lines in 1987-88. During the current year, upto the end of September, 1988, 76 KMs of new lines have been completed and 40 KMs of existing track have been doubled.

3.32 The railways electrified 681 Route KMs in 1987-88, which was an all time record. Total

RKMs electrified till the end of the year was 8155 against a target of 9840 by the end of the Seventh Plan. Target set for electrification during the current year is 680 RKMs. Work is going on and this target is likely to be achieved.

3.33 Net Tonne Kilometres (NTKMs) per wagon per day taken as the efficiency indicator of productivity in the railways increased to 1449 in 1987-88 from the previous year's level of 1420 for the Broad-Gauge wagon fleet. This exceeds the productivity target of 1400 NTKMs/wagon /day originally envisaged in the Seventh Plan for the terminal year, 1989-90. However, there has been a drift back in the first nine months (April—December) of the current year when the NTKMs/wagon/day on Broad-Gauge lines declined to 1411 although this was higher than the level of 1393 achieved during the corresponding period of last year.

Ports

3.34 Cargo handled at the 11 major ports of the country during 1987-88 at 133.8 million tonnes was 7.6 per cent higher than 124.4 million tonnes handled in 1986-87 and 8.7 per cent above the target of 123.08 million tonnes. Major increases were recorded in the traffic of POL, coal, vegetable oil and containerised cargo. The traffic in iron ore, fertilisers and raw materials for fertiliser declined marginally as compared to 1986-87. Growth in cargo handling achieved during the year was higher than the growth of 4.1 per cent achieved in 1986-87.

3.35 Cargo handled at all the major ports except Mormugao increased in 1987-88 over the previous year. In the case of Mormugao, there was a fall of 10.7 per cent. Achievements of targets across the ports were uneven. Madras port performed well by exceeding the target by 33.3 per cent followed by Bombay, by 17.3 per cent. Haldia, Visakhapatnam, New Mangalore and Mormugao failed to achieve the targets. The container traffic in 1987-88 recorded an increase of over 19 per cent as compared to the previous year's level. About 5.3 million tonnes of containerised cargo were handled in 1987-88 as compared to 4.5 million tonnes in 1986-87. More than 50 per cent of the container traffic continued to be handled at the port of

Bombay. The total cargo handling capacity at major ports in 1987-88 was 141.93 million tonnes.

Capacity utilisation during the year was 94.2 per cent as compared to 86.7 per cent in 1986-87.

TABLE 3.10
Trends in Port Traffic (Major Ports)

Sl. No.	Commodity	(Million Tonnes)							
		1985-86	1986-87	1987-88£	April-December		Percentage change		
					1987-88	1988-89	1986-87	1987-88	1988-89*
1	2	3	4	5	6	7	8	9	10
1.	POL	54.89	56.11	63.58	46.80	48.41	2.2	13.3	3.4
2.	Iron Ore	28.82	30.58	28.74	18.85	22.43	6.1	-6.0	19.0
3.	Fertilisers & Fertiliser raw materials	6.17	5.33	4.51	3.33	3.88	-13.6	-15.4	16.5
4.	Foodgrains	0.62	0.68	1.06	0.88	1.76	9.7	55.9	100.0
5.	Coal	7.54	9.62	12.76	9.21	11.19	27.6	32.6	21.5
6.	Vegetable Oil	1.28	1.66	2.13	1.57	1.40	29.7	28.3	-10.8
7.	Other liquids	2.16	2.30	2.07	1.39	2.29	6.5	-10.0	64.7
8.	Containerised cargo	3.97	4.46	5.33	3.63	3.88	12.3	19.5	6.9
9.	Others	14.06	13.63	13.60	10.03	11.90	-3.1	-0.2	18.6
TOTAL		119.51	124.37	133.78	95.69	107.14	4.1	7.6	12.0

£Provisional.

*April-December.

3.36 During the period April—December this year, cargo handling at the major ports at 107.14 million tonnes increased by 12.0 per cent from 95.69 million tonnes during the corresponding period of 1987-88. All the ports exceeded their targets although volume of cargo handled at Calcutta port was marginally lower compared to the corresponding period of last year. Target fixed for cargo handling by the major ports for the current year is 128.15 million tonnes. About 84 per cent of the target has already been achieved in the first nine months.

3.37 Coastal shipment of coal to the South via Haldia, Paradip and Visakhapatnam improved considerably by 32 per cent from 3.53 million tonnes in 1986-87 to 4.67 million tonnes in 1987-88. The total shipment was, however, lower than 6.26 million tonnes planned for the year mainly because of occasional shortage of coal supplies, breakdown of equipment at Haldia and withdrawal of ships for other essential work.

3.38 Coastal shipment of coal to the South during April—December this year at 3.85 million tonnes was 13.6 per cent higher than 3.39 million tonnes shipped during the corresponding period of last year. Non-availability of vessels at Paradip and Visakhapatnam ports for a few days is reported to have affected the shipment of coal.

Telecommunications

3.39 Telecommunications sector performed well in 1987-88 in creating additional switching capacity, providing new telephone connections and in the production of switching equipment. Additional switching capacity, commissioned during the year was 3.4 lakh lines as against a target of 3.00 lakh lines and 3.24 lakh lines commissioned in 1986-87, thereby exceeding the target by 13.3 per cent and achieving a growth of 4.9 per cent over the previous year. About 42 per cent of this capacity expansion was in the four metro districts of Delhi, Bombay, Calcutta and Madras. Additional switching capacity created in these metro cities during the year was 44 per cent over the previous year's level and exceeded the target by 28 per cent. Compared to previous year's achievement there was a shortfall in the case of other regions.

3.40 The number of new telephone connections provided during the year was 3.13 lakh Direct Exchange Lines (DELs) which was 5.4 per cent less than 3.24 lakh DELs provided in the previous year. The four metro districts accounted for about 36 per cent of the total new telephone connections provided. While there was an increase of over 36 per cent in the

new telex capacity created during the year at 3342 lines, number of new telex connections

provided at 3438 was about 17 per cent lower than the previous year's achievement.

TABLE 3.11
Performance of Telecommunication Sector

Sl. No.	Group/Total	1985-86	1986-87	1987-88£	April-December		Percentage change		
					1987-88	1988-89	1986-87	1987-88	1988-89*
							1985-86	1986-87	1987-88*
1	2	3	4	5	6	7	8	9	10
I. Addition to Switching Capacity: (Lakhs Lines)									
(1)	Metro districts	1.39	1.00	1.44	0.58	0.33	-28.1	44.0	-43.1
(2)	Others	2.19	2.24	1.96	0.69	1.20	2.3	-12.5	73.9
	TOTAL (All-India)	3.58	3.24	3.40	1.27	1.53	-9.5	4.9	20.5
II. Telephone Connection Provided: (DELs) ('000 Nos.)									
(1)	Metro districts	96.47	113.73	114.12	58.66	52.78	17.9	0.3	-10.0
(2)	Others	171.37	210.42	198.96	84.68	100.52	22.8	-5.4	18.7
	TOTAL (All-India)	267.84	324.15	313.08	143.33	153.30	21.0	-3.4	7.0
III. Telex service:									
(1)	Telex Capacity (Lines.)	1580	2450	3342	922	1368	55.1	36.4	48.4
(2)	Telex Connection (Nos.)	4262	4132	3438	2429	2149	-3.1	-16.8	-11.5
IV. Production of Switching Equipment : ('000 lines)									
(1)	Strowger	158.60	166.52	154.24	102.13	139.69	5.0	-7.4	36.8
(2)	Crossbar	86.58	89.04	97.90	40.37	56.41	2.8	10.0	39.7
(3)	Electronic	62.00	175.03	259.57	144.05	166.81	182.3	48.3	15.8
	TOTAL	307.18	430.59	511.71	286.55	362.91	40.2	18.8	26.6
V. Laying of Telephone cables: (Lakh conductor kilometres)									
(1)	Metro districts	15.11	17.31	25.07	13.94	12.18	14.6	44.8	-12.6
(2)	Others	15.03	19.52	27.04	17.13	20.95	29.9	38.5	22.3
(3)	TOTAL (All-India)	30.14	36.83	52.11	31.07	33.13	22.2	41.5	6.6

*April-December

£Provisional

3.41 Laying of telephone cables during the year at 52.11 lakh Conductor Kilometres (CKMs) exceeded the target of 44.00 lakh CKMs by 18.7 per cent and the previous year's achievement of 36.83 lakh CKMs by 41.5 per cent. Total production of switching equipment (Strowger, Crossbar and Electronic) by the Indian Telephone Industries (ITI) during the year was 5.12 lakh lines which exceeded the target of 4.92 lakh lines by 4 per cent and the actual production of 4.31 lakh lines in 1986-87 by 18.8 per cent.

3.42 An additional switching capacity of 1.53 lakh lines has been created in the telephone system during April-December this year. This was 20.5 per cent more than the additional switching capacity of 1.27 lakh lines created during April-December, 1987. Number of new telephone connections (DELs) provided during the period at 1.53 lakhs was also more than the previous

year's achievement of 1.43 lakh DELs by 7 per cent. Of the total new connections provided, 34.4 per cent was in the metro cities. There was an increase of 18.7 per cent in the new telephone connections provided in other regions. About 33.13 lakh CKMs of cables have been laid during the period April-December this year as against 31.07 lakh CKMs in the corresponding period of last year.

3.43 ITI produced 3.63 lakh lines of switching equipment during April-December this year which was 26.6 per cent more than the production of 2.87 lakh lines in the corresponding period of last year. Bulk of this increase was in strowger and crossbar equipment. Production of electronic switching equipment at 1.67 lakh lines exceeded the production of 1.44 lakh lines in April-December, 1987 by 15.8 per cent.

Basic Industries

Steel

3.44 Total production of saleable steel by the integrated steel plants in 1987-88 was 8.6 million tonnes against a target of 9.1 million tonnes. As compared to the production of 8.2 million tonnes in 1986-87 production of saleable steel in 1987-88 was higher by 4.5 per cent but fell short of the target by 6 per cent. There was a deceleration in the growth of saleable steel production in the year from 5.8 per cent growth achieved in 1986-87. The performance of the Steel Authority of India Ltd. (SAIL) fell short of the target by 7.7 per cent while Tata Iron and Steel Company (TISCO) exceeded the target marginally by 0.2 per cent. Actual production by

SAIL, however, was 5.9 per cent more than the previous year's production. Among the SAIL units, Bhilai Steel Plant (BSP) recorded the largest shortfall of 11.8 per cent from the target mainly because of lower utilisation of blast furnaces arising from operational problems and delay in stabilisation. The overall capacity utilisation of the five integrated plants of SAIL during the year was higher at 69 per cent as compared to 63 per cent in 1986-87, but lower than the capacity utilisation of 105 per cent achieved by the private sector TISCO in respect of crude steel. Production of saleable pig iron by SAIL at 1.20 million tonnes in the year was also 4.8 per cent lower than the previous year's production of 1.26 million tonnes and fell short of the target of 1.39 million tonnes by 13.7 per cent.

TABLE 3.12

Production Performance of Steel Sector

(Million Tonnes)

Product	1985-86	1986-87	1987-88£	April-December£		Percentage change		
				1987-88	1988-89	1986-87	1987-88	1988-89*
						1985-86	1986-87	1987-88
1	2	3	4	5	6	7	8	9
1. Saleable Steel (M/Plants)	7.77	8.22	8.59	6.03	6.64	5.8	4.5	10.1
2. Saleable Pig Iron (SAIL)	1.16	1.26	1.20	0.96	0.77	8.6	-4.8	-19.8

£ Provisional

* April-December

3.45 Prospects of steel production during the current year are better. Production of saleable steel by the integrated steel plants during April-December, 1988 was 6.64 million tonnes. This was 10.1 per cent more than the production of 6.03 million tonnes during the corresponding period of last year. The overall capacity utilisation of the integrated steel plants in the production of ingot steel during the period improved to 66 per cent from 57 per cent in April—December, 1987. The declining trend in the production of saleable pig iron by SAIL continues during the current year also. Production in April—December this year at 0.77 million tonnes was 19.8 per cent less than the production of 0.96 million tonnes in the corresponding period of last year.

Cement

3.46 Production of cement in 1987-88 estimated at 39.5 million tonnes was 8.0 per cent higher than the previous year's production but fell short of the target of 42.5 million tonnes by 7.0 per cent. Growth achieved by the industry in the year was, however, much lower than the growth of 10.4 per cent achieved in 1986-87. Shortfall in cement production from the target in the year was mainly due to severe power shortages faced by many cement plants particularly in Karnataka, Tamil Nadu, Andhra Pradesh, Rajasthan and Madhya Pradesh. Labour unrest in some units also affected production. Overall capacity utilisation in the cement industry has

declined from 78 per cent in 1986-87 to 72 per cent in 1987-88. Closing stocks of cement in the

year at 6.54 lakh tonnes was also lower than the previous year's closing stocks of 6.46 lakh tonnes.

TABLE -3.13
Production Performance of Cement Sector

Plants	1985-86	1986-87	1987-88£	April-December£		Percentage change		
				1987-88	1988-89	1986-87	1987-88	1988-89*
						1985-86	1986-87	1987-88*
1	2	3	4	5	6	7	8	9
I. Large Size Plants:								
(i) Public Sector	4.61	4.65	5.11	3.62	3.88	0.9	9.9	7.2
(ii) Private Sector	27.43	30.17	32.31	23.65	26.68	10.0	7.1	12.8
II. White/Mini Cement Plants								
TOTAL	33.13	36.59	39.51	28.82	32.28	10.4	8.0	12.0

£ Provisional

*April-December.

3.47 The cement industry has been performing much better in the current year. Production of cement in April—December, 1988 was 32.28 million tonnes as against 28.82 million tonnes in April—December last year, thereby achieving a growth of 12.0 per cent. Against an installed capacity of million tonnes including 3 million tonnes in mini-cement plants, overall capacity utilisation of the cement industry during the period improved to 75 per cent as compared to 71 per cent in the corresponding period of last year. Cement production is targeted to be 43.5 million tonnes in the current year and 74 per cent of this target has been achieved in the first nine months.

3.48 Since the partial decontrol of cement in February 1982, investment and production in the industry have gone up substantially. Cement production this year is likely to exceed the demand. At present, the levy obligation is only 21 per cent of the total production. In order to compensate for the increase in the capital cost of new cement plants, units of later vintages are given concessions in excise duty and levy obligation. New units which started production on or after April 1, 1986 have a lower levy obligation of 15 per cent and also get a rebate of Rs. 50/- per tonne in the excise duty on cement.

Fertilisers

3.49 The fertiliser industry did not fare well

in 1987-88. Production was affected by various constraints such as power shortage, water scarcity, short supply of natural gas, shortage of imported phosphoric acid, equipment failure, labour unrest and demand constraints because of drought. Production of nitrogenous and phosphatic fertilisers during the year at 5.47 million tonnes and 1.67 million tonnes respectively just maintained the previous year's level of production. Production of nitrogenous fertiliser was short of the target of 5.60 million tonnes by 2.4 per cent. In the case of phosphatic fertiliser, production fell short of the target of 2.10 million tonnes by as much as 20.7 per cent mainly because of the shortage of imported phosphoric acid. The overall capacity utilisation of fertiliser plants fell from 79.1 per cent in 1986-87 to 77.6 per cent in 1987-88 in the case of nitrogenous fertiliser and from 80.1 per cent to 71.5 per cent in the case of phosphatic fertiliser. Total offtake of fertilisers in 1987-88 at 9.01 million tonnes (including 0.92 million tonnes of potassic fertiliser) was short of the target of 10.30 million tonnes, but 3 per cent higher than the offtake of 8.74 million tonnes in 1986-87. Import of fertilisers during the year was only about 1 million tonnes as against 2.3 million tonnes in 1986-87. Actual consumption of fertilisers during the year was much lower than the offtake because of drought. As a result, stocks piled up. At the close of the year 1987-88 stocks of fertilisers in terms of nutrients, was

22.16 lakh tonnes of nitrogen and 4.4 lakh tonnes of phosphate as against 18.83 lakh tonnes and 6.19 lakh tonnes respectively at the close

of the previous year. The stocks of phosphate would have been higher but for the fall in production in the year.

TABLE 3.14
Production Performance of Fertiliser Sector

Product	(000 Tonnes)							
	1985-86	1986-87	1987-88£	April-December£		Percentage change		
				1987-88	1988-89	1986-87	1987-88	1988-89*
1	2	3	4	5	6	7	8	9
1. Nitrogenous:	4238.0	5410.0	5466.0	3894.9	4913.5	25.0	1.0	26.2
(i) Public Sector	2052.0	2514.0	2649.8	1834.3	2225.8	22.5	5.4	21.3
(ii) Private Sector	1685.5	1778.0	1615.4	1161.3	1521.2	5.5	-9.1	31.0
(iii) Co-operative Sector	590.5	1118.0	1200.8	899.3	1166.5	89.3	7.4	29.7
2. Phosphatic:	1427.6	1660.0	1665.0	1125.6	1851.9	16.3	0.3	64.5
(i) Public Sector	304.0	558.0	510.0	354.2	554.8	83.6	-8.6	56.6
(ii) Private Sector	771.7	760.0	865.8	561.6	1033.0	-1.5	13.9	83.9
(iii) Co-operative Sector	351.9	342.0	289.2	209.8	264.1	-2.8	-15.4	25.9
TOTAL (1+2)	5755.6	7070.0	7131.0	5020.5	6765.4	22.8	0.9	34.8
£ Provisional								
								*April-December.

3.50 Performance of the fertiliser industry so far during the current year has been satisfactory. Production of nitrogenous fertiliser during the period April—December, 1988 at 4.91 million tonnes was 26.2 per cent more than the production in the corresponding period of last year. Production of phosphatic fertiliser during the period at 1.85 million tonnes, also exceeded the corresponding production of last year by 64.5 per cent. The industry has considerably improved its capacity utilisation during the period April—December this year over the corresponding period of last year—from 75.0 per

cent to 84.1 per cent in the case of nitrogenous fertiliser and from 69.4 per cent to 96.1 per cent in the case of phosphatic fertiliser. Targets set for the production of fertilisers for the current year are 6.4 million tonnes of nitrogenous and 2.2 million tonnes of phosphatic fertilisers. Achievements of the targets upto December, 1988 have been 77 per cent in nitrogenous fertiliser and 84 per cent in phosphatic fertiliser. Consumption of fertilisers during the current year is expected to be around 10.2 million tonnes (including 1 million tonnes of potassic fertiliser). About 85 per cent of this demand is likely to be met by domestic production.