9

INFRASTRUCTURE

Adequate quantity, quality and reliability of infrastructure are necessary preconditions for overall economic growth and development. The condition of infrastructure has also a direct correlation to international competitiveness and flow of direct foreign investment. The ongoing economic reforms thus attach a high priority to the better utilisation of existing infrastructure assets and fresh development of infrastructure so that existing bottlenecks do not inhibit the overall economic growth and export dynamism. The responsibility of creating infrastructure services has been until recently given to the public sector which has been beset by severe problems like lack of accountability, low productivity, poor financial performance and over employment. To achieve greater efficiency and accountability in these sectors it is necessary to introduce competition in the provision and operation of infrastructure services and to make them to work on accepted commercial principles. As the government's ability to undertake investment in infrastructure is severely constrained, it is necessary to induce much more private sector participation in the provision of infrastructural services. The entry of the private sector can also encourage better risk sharing, accountability, monitoring and management of infrastructure sectors.

2. The Government has already introduced several structural reforms in the infrastructural sectors . In the power sector, a package of incentives to attract private investment was announced. This package included reduction of import duties on power equipment to 20 per cent; a five year tax holiday for new power projects; a guaranteed 16 per cent rate of return on paid up and subscribed capital and provision of counter guarantees by the central Government for a set of "fast track" private power projects. In the petroleum sector, the Government has allowed imports and distribution of certain petroleum products like domestic LPG, (Liquefied Petroleum Gas) LSHS (Low Sulphur Heavy Stock) and kerosene by the private sector at market prices to stimulate new investments and promote operational efficiency. The recently created ONGC Limited has disinvested 2 per cent of its equity and proposes to disinvest more in domestic and foreign markets. Private and foreign companies are now allowed to invest in oil exploration and production in joint ventures with ONGC or OIL, and in the refining of petroleum products. The domestic market in lubricants has been opened up to foreign collaborations. A new National Telecom Policy has been announced by the Government in May 1994 which has opened up the telecom sector for private participation in basic telecom services and foreign equity up to 49 per cent.

3. The enactment of Air Corporations Act, 1994 has enabled private air taxi companies to operate in the domestic sector. During 1994-95, six air taxi operators complying with the criteria prescribed with Air Craft Rules have been granted scheduled airlines status. Areas like the development and maintenance of airport infrastructure and handling of materials at major airports have been opened for private sector participation. In postal services, the Government has agreed to give up its monopoly control by permitting the private sector to enter into the distribution of postal stationery on commission basis.

4. To promote private sector participation in the development and maintenance of roads, several measures have been announced in 1994-95, including declaring the road sector as an industry to facilitate borrowing from financial institutions; amendment of the National Highway Act to enable the levy of a toll on road users and relaxation in MRTP provisions to enable large firms to enter this sector. Following the new policy of liberalisation and competition, railways have introduced reforms in their marketing and commercial policies and simplified rules and procedures in key areas. In ports, the private sector is being invited to participate in areas such as leasing of port equipment, setting up of

TABLE 9.1
Trends in the Performance of Infrastructure Sectors

	Unit	1993-94	1994-95*	April-November* 1994	April-November* 1995	Change over previous year 1985-90 Average	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96@
								(per cent)				
Energy												
1 Coal												
(a) Production	Mn.tonnes	246.0	253.8	145.8	155.1	6.4	5.4	8.3	3.9	3.3	3.2	6.4
(b) Pit-head stocks (year end)	,,	50.7	46.4	34.0	34.2	-	13.7	14.5	5.3	-1.2	-8.4	0.7
(c) Despatches	,,	242.6	248.3	155.3	165.3	-	4.8	8.8	5.6	5.0	2.4	6.4
2 Electricity generated (Utilities only)	Bn. kwh	323.5	351.0	226.2	248.7	9.4	7.7	8.5	4.9	7.5	8.5	9.9
(a) Hydel	,,	70.4	82.5	58.3	52.9	3.5	15.2	1.4	-4.0	0.8	17.2	-9.3
(b) Thermal (incl.nuclear)	,,	253.1	268.5	167.9	195.8	12.3	5.1	11.1	8.1	9.5	6.1	16.6
3 Petroleum												
(a) Crude oil production	Mn.tonnes	27.0	32.2	21.0	23.4	3.3	-3.1	-8.1	-11.2	0.3	19.3	11.6
(b) Refinery throughput	,,	54.3	56.3	37.8	38.9	8.0	-0.3	-0.7	4.0	1.5	3.8	3.0
Transport and communications												
1 Railway revenue-earning goods traffic	,,	358.7	365.0	232.2	245.3	5.6	2.7	6.2	3.6	2.5	1.7	5.7
2 Cargo handled at major ports	,,	179.3	197.3	123.3	136.9	6.9	3.0	3.3	5.7	7.6	10.0	11.1
3 Telecommunications- New telephone connections provided (DELs)	'000Nos.	1229.0	1770.0	607.6	805.3	16.6	14.7	51.5	34.2	24.5	44.0	32.5

* Provisional. @ April-November.

private ports by coast-based industries, ship repair and maintenance and transportation within ports.

5. The overall performance of infrastructural sectors has been quite satisfactory during 1994-95. The declining trend of crude oil production was arrested and reversed due to creation of additional capacities. The year 1995-96 has also shown a promising performance in infrastructural sectors. During April-November 1995-96, electricity generation increased by 9.9 per cent, crude oil by 11.6 per cent, and new telephone connections by 32.5 per cent (Table 9.1). Six infrastructural industries viz. electricity, coal, steel, cement, crude oil and petroleum products with a combined weight of 28.8 per cent in the Index of Industrial Production (IIP) recorded a growth rate of 8.9 per cent in April-November, 1995 compared with 7.4 per cent in April-November, 1994.

Coal

6. Coal is one of the primary sources of energy, accounting for about 67 per cent of total energy consumption in the country. Coal production at 253.8 million tonnes in 1994-95 represented a growth of 3.2 per cent over 1993-94. Non-coking coal production, contributing about 83 per cent to total coal output, increased by 4.3 per cent, whereas coking coal production declined by 1.8 per cent. Coal production during April-November, 1995 increased by 6.4 per cent (Table 9.2), but it fell short of the target fixed for the period by 4.1 per cent. The underground mines registered a growth of 0.6 per cent while the Opencast mines have shown a growth of 8.8 per cent during April-November 1995 and continued to account for the major share in coal production.

7. Coking coal production at 13.2 million tonnes during April-November, 1995 was 7.2 per cent less than that in April-November, 1994. Given the trends in the production of coking coal and its high ash content, it is unlikely that imports of coking coal will go down in the immediate future. Imports of coal have been consistently increasing and reached a level of 8.5 million tonnes in 1994-95.

8. Total despatches of coal in 1994-95 at 248.3 million tonnes increased by 2.4 per cent, but increased substantially by 6.4 per cent in April-November 1995. The total pithead stocks of coal declined from 46.4 million tonnes as on March 31, 1995, to 34.2 million tonnes as on November 30, 1995. But these are still far above optimal stock levels, which would be equal to one month's production. To reduce the pithead coal stocks to a reasonable level, short term coal production needs

TABLE 9.2
Trends in the Coal Sector

	1993-94	1994-95*	April-November* 1994	April-November* 1995	Change over previous year 1994-95	Change over previous year 1995-96@
			(Million tonnes)			(per cent)
1 Production						
(a) Opencast	169.6	178.6	102.9	111.9	5.3	8.8
(b) Underground	76.4	75.2	42.9	43.2	-1.6	0.6
Total	246.0	253.8	145.8	155.1	3.2	6.4
2 Production (By coal grades)						
(a) Coking coal	45.1	44.3	14.2	13.2	-1.8	-7.2
(b) Non-coking coal	201.0	209.6	131.6	141.9	4.3	7.8
(c) Washed coal	12.2	11.8	6.0	6.1	-3.8	2.3
(d) Middlings	5.2	6.3	3.3	3.3	22.2	1.2
3 Pithead stocks (year-end)	50.7	46.4	34.0	34.2	-8.4	0.5
4 Despatches	242.6	248.3	155.3	165.3	2.4	6.4
5 Lignite production	18.1	19.3	9.1$	11.3$	6.6	23.7
6 Output per man-shift (OMS)						
(i) CIL	1.5	1.6	1.4	1.5	7.2	10.0
(ii) SCCL	1.1	1.1	0.9	1.1	2.9	17.1

* Provisional. @ April-November. $ By NLC only.

to be planned keeping in view the availability of railway wagons for its transportation to consuming points.

9. One of the major constraints on the profitability of the coal sector is low productivity in underground mines. This has stagnated at an output per man shift (OMS) of 0.55 tonnes for the last two decades, despite massive investments made in mechanisation of underground mines. The underground mines employ 80 per cent of manpower, but contribute only 30 per cent of total output. Productivity levels can be improved through better utilisation of existing stocks of machinery and equipment, greater flexibility in manpower deployment and rationalisation of the work force.

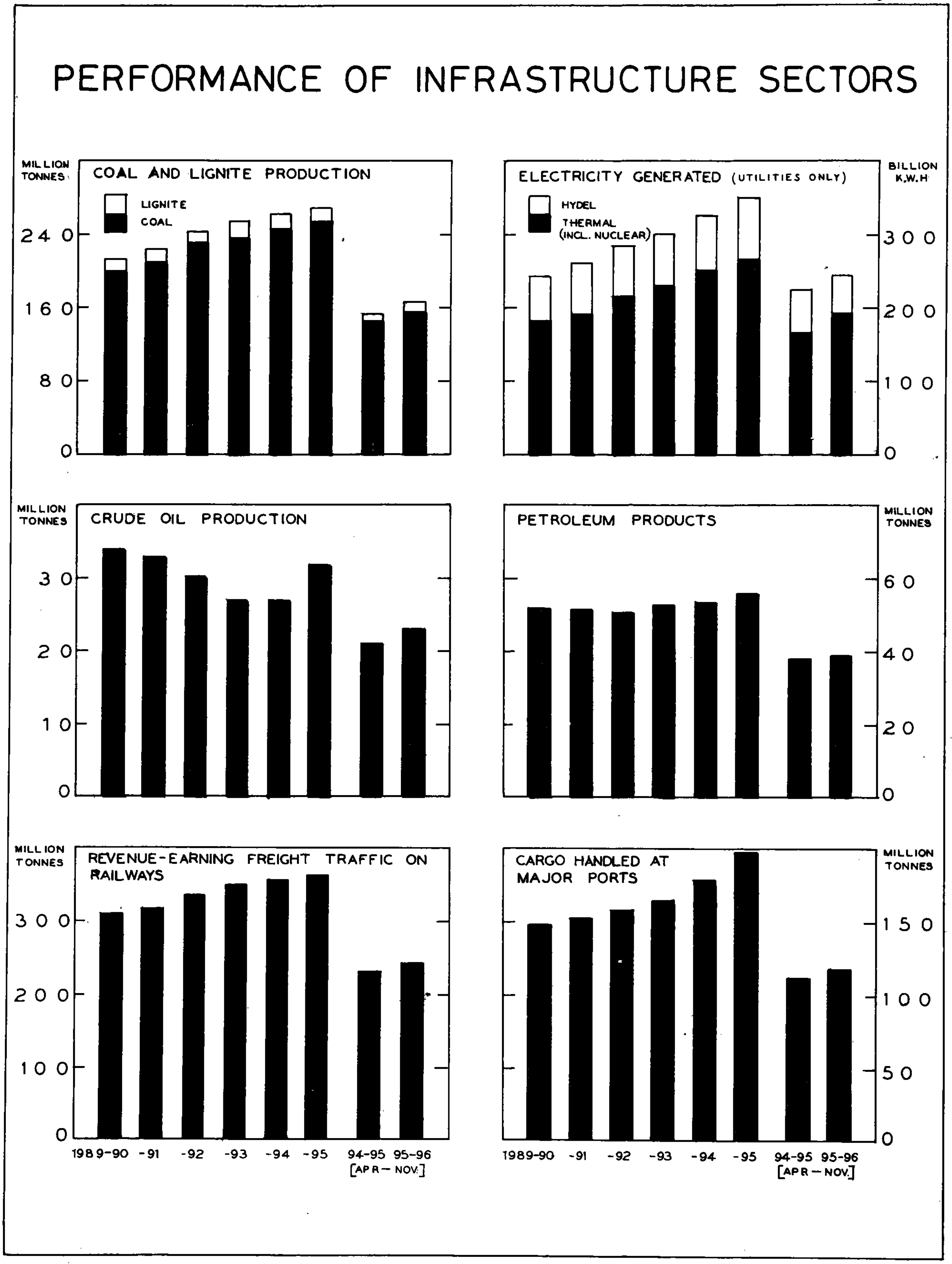
10. Indian coal has high ash content and low calorific value. The ash content varies from 20 to 30 per cent and sometimes exceeds 40 per cent. The transportation of such a non beneficiated coal, carrying inert material over long distances, not only leads to wastage of transport capacity and energy, but also results in low efficiency of coal based thermal power plants and adds to air pollution through higher emission and ash disposal. Distant thermal power stations are now being encouraged to use beneficiated coal. Two non-coking coal washeries with a capacity of 11 million tonnes per annum are likely to be commissioned in 1996. Four more washeries with a capacity of about 21 million tonnes per annum are to be set up by CIL under Build-Own-Operate (BOO) Scheme during the Ninth Five Year Plan. Given our large coal reserves and high import prices of alternative fuel, it is imperative to assess the status of advanced coal utilisation techniques to minimise environmental damage.

11. In order to encourage private sector investment in the coal sector, the Coal Mines (Nationalisation) Act, 1973 was amended with effect from June 9, 1993 for operation of captive coal mines by companies engaged in the production of iron and steel, power generation and washing of coal in the private sector. Imports of coking coal under Open General Licence (OGL) are being allowed and the import tariff has been slashed from 85 per cent to 35 per cent. Captive coal mining blocks have been identified for thirteen power generating companies/ Electricity Boards and for four companies in the iron and steel sector.

12. As on September 30, 1995, out of 76 projects under implementation in the coal sector, 22 projects are bedevilled by time and cost overruns. On an average, the cost overrun per project is about Rs 65 crore and the time overrun per project is about 35 months. There is urgent need to improve project implementation in the coal sector.

13. The borrowings of Coal India Limited (CIL) from the Central Government as on March 31, 1995, were Rs 3814 crore. With the reduction in budgetary support public sector coal companies are required to approach external, domestic and international sources for medium and long term credit to finance

Figure 9.1



PERFORMANCE OF INFRASTRUCTURE SECTORS
MILLION TONNES
COAL AND LIGNITE PRODUCTION
LIGNITE
COAL
240
160
80
0
ELECTRICITY GENERATED (UTILITIES ONLY)
BILLION K.W.H
HYDEL
THERMAL (INCL. NUCLEAR)
300
200
100
0
MILLION TONNES
CRUDE OIL PRODUCTION
30
20
10
0
PETROLEUM PRODUCTS
MILLION TONNES
60
40
20
0
MILLION TONNES
REVENUE-EARNING FREIGHT TRAFFIC ON RAILWAYS
300
200
100
0
1989-90 -91 -92 -93 -94 -95 94-95 95-96
[APR – NOV]
CARGO HANDLED AT MAJOR PORTS
MILLION TONNES
150
100
50
0
1989-90 -91 -92 -93 -94 -95 94-95 95-96
[APR – NOV]

their planned increases in production. The cash and carry scheme implemented by CIL from October 1, 1992, enabled the company to slow down the growth of arrears, but the company is required to take steps to realise the large outstanding indisputed sales dues. In order to ensure access to external sources of funds, the Coal Companies must continue to remain financially viable. However, unless the increase in cost of inputs is neutralised by suitable increases in coal prices the profitability is bound to erode over a period of time. Since coal is largely moved by rail, distribution of coal gets linked with the distribution of railway wagons for the movement of coal. Therefore, unless railway wagons are made freely available and the choice of the source is left to the decision of the consumer, distribution of coal is unlikely to be determined on least economic cost basis. Thus, there is a need to evolve rational price and distribution policies to improve efficiency in the coal sector and to attract foreign investments. CIL plans to invite foreign companies to form joint ventures in longwall mining projects need to be supplemented by efforts to improve its profitability.

Power

14. Power generation in 1994-95 at 351.02 billion kwh recorded a growth of 8.5 per cent over 1993-94 but fell short of the target for the year by 0.3 per cent. Thermal, hydro and nuclear generation went up by 6.1 per cent, 17.3 and 3.7 per cent respectively, in comparison to the generation during the year 1993-94 (Table 9.3).

15. Total generation of power in April-November, 1995 was 248.7 billion kwh, compared to 226.2 billion kwh during April-November, 1994, showing a growth of 9.9 per cent. While thermal and nuclear generation went up by 15.8 per cent and 58.4 per cent respectively, hydro generation declined by 9.3 per cent.

16. Thermal plants at present account for 74 per cent of total power generation and hydro electricity plants for 24 per cent, with the balance 2 per cent being generated by nuclear plants. The installed capacity of power generation as on March 31, 1995, was 81,164 MW. The total installed capacity increased by 3537 MW in 1992-93, (79 per cent of the target), 4539 MW in 1993-94 (102 per cent of the target), and by 4599 MW in 1994-95 (95 per cent of the target). Thus in the first three years of the Eighth Plan, capacity addition has been 12675 MW, as against the Eighth Plan target of 30858 MW. About 13 per cent of the total capacity addition during the first three years has been accounted for by hydel and the remaining by thermal units. Nearly half of the addition in capacity occurred in the Central sector, 44 per cent in the State sector and the rest in the private sector. The Central sector has achieved 49.5 per cent of the Eighth Plan target in the first three years of the plan. The corresponding figures for the State and private sectors are 37.8 per cent and 24.2 per cent respectively. Against the target of 1234.25 MW set for April-December 1995-96, the actual additions have been 510.25 MW during this period. (Table 9.4).

17. The Plant Load Factor (PLF) is an important indicator of operational efficiency of thermal power plants. The average PLF in 1994-95 and in April-November 1995 in Central PSUs was appreciably higher than that achieved by State Electricity Boards (SEBs) (Table 9.5). The low capacity utilisation of thermal power plants of the SEBs is largely due to deficiencies in management and operation, lack of proper maintenance and non-availability of coal of appropriate quality. There are wide inter state variations in the average PLF of thermal plants. The average PLF in the case of Eastern and North Eastern regions continued to be much lower than

TABLE 9.3
Trends in the Power Sector (utilities only)

			April-November*		Change over previous year	
	1993-94	1994-95*	1994	1995	1994-95	1995-96@
			(Billion KWH)		(per cent)	
1 Power generation	323.5	351.0	226.2	248.7	8.5	9.9
(i) Hydro-electric	70.4	82.5	58.3	52.9	17.3	-9.3
(ii) Thermal	247.8	262.9	164.6	190.6	6.1	15.8
(iii) Nuclear	5.4	5.6	3.3	5.2	3.7	58.4
2 Plant load factor of thermal plants (per cent)	61.0	60.0	56.6	60.5		

* Provisional. @ April-November.

TABLE 9.4

Addition to Generating Capacity

(MW)

Sector	1993-94		1994-95		April-December 1995*	
	Target	Actual	Target	Actual	Target	Actual
Thermal	3265.0	3742.0	4125.5	3928.5	1170.0	503.5
Hydro	954.0	797.0	473.3	450.0	64.3	6.8
Nuclear	220.0	-	220.0	220.0	-	-
Total	**4439.0**	**4539.0**	**4818.8**	**4598.5**	**1234.3**	**510.3**

* Provisional.

the all India average, which was 60.5 per cent during April-November 1995.

18. An action plan has been drawn up to improve the performance of the power sector in a phased manner, involving short term, medium term and long term measures, covering both physical and financial aspects of generation, transmission and distribution of power. Short term measures include overhaul and maintenance (O&M) of boilers and optimal operation of regional grids, which will result in substantial improvement in the availability of stations and consequent increases in the Plant Load Factor (PLF). Significant improvements in the PLF of thermal power stations can be effected through medium term measures like proper maintenance planning. In the long term, the availability factor of older thermal power plants can be improved by appropriate Renovation and Modernisation (R&M) programmes.

19. The critical problem area in the power sector continues to be the poor performance of SEBs, which generate and distribute power, set tariffs and collect revenues. Agriculture and industry continued to be the two most important categories of consumers in terms of their relative shares, with SEB electricity charges set at much below cost for the agricultural sector and above unit cost for the industrial sector (Table 9.6). Unit revenue realisation from the agricultural sector in none of the SEBs covers a reasonable fraction of the unit average cost for the SEB, leading to heavy financial losses. The commercial losses of SEBs in absolute terms which were little over Rs.7500 crore in 1995-96 (RE) are projected to increase further to about Rs.10,096 crore in 1996-97. The hidden subsidy for agriculture and domestic sectors has increased from Rs.7439 crore in 1992-93 to Rs.13,589 crore in 1995-96 (RE) and is projected to further go up to Rs.15,349 crore in 1996-97 (Table 9.7). Introduction of the proposed national minimum agricultural tariff of 50 paise/kwh, even if implemented, will still leave uncovered a substantial proportion of the subsidy provided to the sector.

TABLE 9.5
Thermal Plant Load Factor

	1991-92	1992-93	1993-94	1994-95*	April-November* 1994	1995 Target	1995
				(per cent)			
I Ownership							
State	50.6	54.1	56.6	55.0	51.1	51.7	55.4
Central Sector	64.5	62.7	69.8	69.2	64.0	65.0	67.7
Private Sector	55.3	58.3	56.6	65.9	66.1	66.4	78.3
II Region							
Northern	58.8	62.0	64.0	59.3	55.3	55.8	60.0
Western	59.6	59.7	63.4	63.8	57.8	60.1	65.5
Southern	60.8	62.6	68.3	69.0	65.6	63.8	71.0
Eastern	37.3	39.8	44.8	43.7	43.3	43.1	40.9
North Eastern	24.6	24.3	19.9	26.8	22.4	24.5	29.4
All India	**55.3**	**57.1**	**61.0**	**60.0**	**55.9**	**56.6**	**60.5**

* Provisional.

TABLE 9.6
Consumer Categorywise Sale of Electricity and Average Tariff

Consumer	1993-94 Sale (%)	1993-94 Tariff (paise/ kwh)	1994-95 Sale (%)	1994-95 Tariff (paise/ kwh)	1995-96@ Sale (%)	1995-96@ Tariff (paise/ kwh)
Domestic	16.5	85.0	16.6	93.0	16.9	91.8
Commercial	4.7	134.3	4.5	203.4	4.6	208.1
Agriculture	28.4	20.1	28.9	21.8	28.0	24.5
Industrial	37.3	185.8	35.8	211.6	36.1	218.4
Rly. Traction	2.1	227.8	2.0	248.6	2.0	254.5
Outside state	1.5	77.9	1.6	104.5	1.8	112.4
Overall	9.5	120.7	10.6	132.9	10.6	140.7
All Consumer	100.0	112.7	100.0	127.4	100.0	132.8

@ Projection

20. In addition, the SEBs have continued to suffer from high transmission and distribution (T & D) losses. However, there is a declining trend as T & D losses have reduced from the peak level of 23 per cent to 21 per cent. But these are still higher when compared with the international average of less than 10 per cent for the advanced countries of the world. High T & D losses are mainly due to sparsely distributed loads over a large rural area, substantial amount of energy sold at low voltage level, under investment in the power distribution systems, inadequate billing and high pilferage of energy. Inherent losses in conductors and equipment can be brought down through system improvement schemes and pilferage and theft of energy can be reduced through appropriate administrative measures.

21. Restoration of financial health of SEBs and improvement in their operational performance continue to remain the most crucial issues today in the power sector. In terms of Section 59 of the Electricity (Supply) Act, 1948, SEBs are required to earn a minimum rate of return of 3 per cent on their fixed assets in service, after providing for depreciation and interest charges. This provision was to become operative from the accounting year of 1985, however the SEBs are yet to comply with this statutory stipulation. The average ROR without subsidy which was -13.5 per cent in 1994-95 declined to -14.6 per cent in 1995-96 (RE) and is further projected to decline to -18.2 per cent in 1996-97 (AP). If SEBs are required to financially break even they would have to mobilise substantial revenue. Thus rationalisation of tariff, levy of a minimum agricultural tariff and commercialisation of operations can improve the financial health of SEBs. Some states have already fixed a minimum tariff of 50 paise per unit for the agricultural sector, but most of them are applying the rate only for metered supply. Strict measures should be taken to reduce unmetered demands and the theft of electricity.

22. A process of restructuring of SEBs has been initiated in several States, namely, Orissa, Haryana, Uttar Pradesh, Rajasthan, Bihar and Andhra Pradesh. Diagnostic studies are being undertaken by external consultants. On the basis of the consultants report, which has been accepted by the Government of Orissa, several of the suggested reform measures have been put in place.

23. The net budgetary support to Central PSUs under the Ministry of Power as compared to the approved plan outlay has been declining steadily over the years and stood at about Rs.689 crore (9.9 per cent) in 1995-96. Because of the decline in budgetary support from year to year, Central PSUs have to mobilise resources through internal and extra budgetary resources (IEBR). During 1994-95, the PSUs were able to mobilise resources amounting to Rs.3375 crore (79 per cent), as against the approved allocation of Rs.4276.2 crore under IEBR. During 1995-96 IEBR component constitutes Rs.4327 crore (62 per cent) of the total approved plan outlay of Rs.6923.5 crore. The actual realisation against the total plan outlay till November 1995 is of the order of Rs.2671 crore, out of which the actuals against IEBR is Rs.1952.3 crore.

24. A review of the existing external assistance portfolio reveals that the total undisbursed balance of external assistance in the power sector by the end of March 1995 stood at Rs.17,164.6 crore. For all power projects, against the estimate of Rs.3272 crore, the actual utilisation during the year 1994-95 was Rs.3190 crore, (97.5 per cent).

25. In the context of paucity of resources with Central/State PSUs and SEBs and to bridge the

TABLE 9.7
Financial Performance of the State Power Sector

	1991-92	1992-93	1993-94 (Pre-Actual)	1994-95 (RE)	1995-96 (RE)	1996-97 (AP)
				(Rs. Crore)		
A. Gross Subsidy involved						
(i) On account of sale of Electricity to:						
(a) Agriculture	5938	7205	8888	10113	12364	13770
(b) Domestic	1310	1919	2420	2963	3158	3875
(c) Inter-State Sales	201	226	138	232	238	288
Total	7449	9350	11446	13308	15760	17933
(ii) Subscriptions Received from State Governments	2045	1911	2068	1831	2171	2584
(iii) Net Subsidy	5404	7439	9378	11477	13589	15349
(iv) Surplus Generated by sale to other sectors $	2173	3312	3502	5308	6294	5764
(v) Uncovered Subsidy	3231	4127	5876	6169	7295	9585
B. Commercial Losses @	4117	4358	4995	6332	7557	10096
C. Revenue Mobilisation						
(i) Rate of Return (ROR)#	-12.7	-11.8	-12.2	-13.5	-14.6	-18.2
(ii) Additional Revenue Mobilisable from Achieving						
(a) 3 per cent ROR	4959	5462	6221	7737	9106	11763
(b) From Introducing 50 paise/ unit from Agriculture/ Irrigiation	2176	2159	2223	2017	2275	2339

Source : Planning Commission

RE:- Revised Estimates. AP-Annual Plan Projections.

@ Commercial losses are different from uncovered subsidy because they include financial result of other activities undertaken by the SEBs.

 # In per cent

Note: Information in Item(A) and (C) (ii) (b) is excluding Delhi Electricity Supply Undertaking (DESU).

gap between the rapidly growing demand for electricity and supply, a policy to encourage greater investments by private enterprises in the power sector, with the objective of mobilising additional resources for capacity addition in power generation and distribution, had been formulated in 1991 and is currently under implementation. The policy to invite private participation in the power sector also covers areas of transmission and distribution besides generation. The response to the new power policy has been overwhelming. Till November 1995, 245 expressions of interest have been received to set up power projects in the power sector with a capacity of 93,661 MW with an approximate investment of more than Rs.3,39,700 crore. Out of these, 52 proposals are from foreign investors including NRIs, and joint venture proposals of which 16 proposals have already been cleared by the Government from the foreign investment angle.

26. To make the policy more attractive, the tariff notification has been amended twice, offering an assortment of additional incentives to investors. To boost private investment in hydro-electric projects, the Government has revised the hydro tariff guidelines. To bring about private investment in the renovation, modernisation and uprating of old power plants, the Government has finalised the policy and the guidelines have been issued. The Government has also taken steps to encourage captive/co-generation plants by industries. As a part of encouraging short gestation period projects, the Government has decided to permit setting up of power projects based on heavy fuel oils such as, Naphtha, Heavy Petroleum Stock (HPS), Low Sulphur Heavy Stock (LSHS), Heavy Furnace Oil (HFO), Furnace Oil (FO) and natural gas, wherever available, as primary fuel.

27. To facilitate setting up of large sized thermal/ hydel power plants in the country, in order to derive the economies of scale, the Ministry of Power has suggested consideration of projects having a capacity of 1000 MW or above and supplying power

to more than one State, as a Mega project. The Government policy proposes identification of such project sites by the Central Electricity Authority , preparation of Feasibility Reports by NTPC and Powergrid to facilitate measures for selection of Promoters and finalising of PPAs between Promoters and SEBs. The SEBs and the State Governments have been advised to introduce a more competitive element in the process of selection of developers and award of projects and consider awarding new projects only on the basis of competitive bidding.

28. In view of the widening gap in supply-demand and huge capital cost involved in installation of new power plants, a movement has been launched to make the consumers aware of the need to save energy. The Government is also vigorously promoting energy accounting and monitoring systems. Energy audits have been carried out in a number of industrial units to identify energy saving opportunities and eliminate wastage and steps are taken to ensure that industries adopt the recommendations of energy audits. Steps have also been taken to improve efficiency of domestic electrical appliances, to improve efficiency of agricultural pump sets and transport efficiency engines and motors in both agricultural and transport sectors, encourage co-generation of electricity in such industries as sugar, paper, cement, petrochemicals and fertilisers.

Petroleum Oil and Lubricants

29. The production of crude oil during 1994-95 at 32.24 million tonnes was close to the target of 32.28 million tonnes, and much higher than the production of 27.03 million tonnes achieved during 1993-94. Oil and Natural Gas Corporation Limited (ONGC) produced 91 per cent of total crude oil in 1994-95, while the rest was produced by Oil India Limited (OIL). Against the annual target of 37.24 million tonnes of crude oil production for the year 1995-96, the production of crude oil during April-November 1995 at 23.41 million tonnes was 97 per cent of the target set for the period and 11.6 per cent higher than the output during the corresponding period in 1994-95. (Table 9.8).

30. The total refinery crude throughput during 1994-95 at 56.34 million tonnes, compared to 54.3 million tonnes achieved in 1993-94 was 106.3 per cent of the target of 53.02 million tonnes set for the year. The average capacity utilisation of the 13 refineries was 106 per cent in 1994-95, compared to 102.5 per cent achieved in 1993-94. The total refinery crude throughput during April-November 1995 at 38.9 million tonnes was 22.1 per cent higher than the target of 31.7 million tonnes set for this period.

31. The production of natural gas in 1994-95 at 19.4 billion cubic metres (BCM) was higher by 5.7 per cent than 1993-94. The utilisation of natural gas during 1994-95 was 18.3 BCM, compared to 16.3 BCM in 1993-94. The production of natural gas during April-November 1995 at 14.6 BCM was 11.8 per cent higher than that in April-November 1994.

32. Natural gas is likely to play a major role in bridging the gap between demand and supply of hydrocarbons in the future. At present, natural gas is being used mainly for core sector industries like power and fertiliser. In the Action Plan 1995-96, the feedstock requirement of fertiliser plants would be met in full and the supply to NTPC would also be increased. However, flaring of natural gas continued and during 1994-95, about 11.6 per cent of the total production of natural gas was flared. Flaring of natural gas takes place due to lack of required compression and transportation facilities, technical requirements of operational safety, availability of gas from isolated pools which can not be economically connected to the transportation network, non lifting of gas by consumers, etc. ONGC and OIL have initiated a number of schemes including the Gas Flaring Reduction Project to reduce flaring to the barest minimum.

33. The government approved an outlay of Rs. 26,552 crore for the Eighth Plan in the petroleum sector. Actual expenditure in the first three years was Rs 24,482.32 crore, which is 92.2 per cent of the total approved outlay. During 1995-96, the anticipated expenditure is Rs 11,744.72 crore. Therefore, the total expenditure by the end of the fourth year of the Plan will be 136.43 per cent of the plan outlay. This highlights the resource requirements in this sector and the need for ongoing liberalisation measures for private sector participation.

34. Government has taken several steps for opening up of the oil and natural gas sector. ONGC has already been converted into a corporation with effect from February 1, 1994. Two per cent of its shares have been awarded to ONGC employees and 2 per cent of Government equity has been disinvested. Advertisement was issued for further disinvestment of 2.5 per cent of equity. The Government has also invited bids for private participation in the exploration activity. The contracts for five blocks under the fourth round of bidding has been approved, of which contracts have already been signed for four blocks. Bids were invited further for fifth, sixth, seventh and eighth round of explorations and for blocks offered under joint venture exploration programme. Under the fifth and sixth Round, Government approved the award of contract for six blocks and three blocks respectively. Under the seventh and eighth round of exploration bidding, 12 and 33 bids were received respectively,

TABLE 9.8

Trends in the Petroleum Sector

	1993-94	1994-95*	April-November* 1994	April-November* 1995	Change over previous year 1994-95	Change over previous year 1995-96@
			(Million tonnes)			(per cent)
1 Crude oil production	27.0	32.2	21.0	23.4	19.3	11.6
(i) Onshore	11.7	12.0	8.0	8.0	3.1	0.0
(a) ONGC	8.8	9.1	6.0	6.1	3.3	0.3
(b) OIL	2.8	2.9	2.0	1.9	2.5	-1.0
(ii) Offshore (ONGC)	15.4	20.2	13.0	15.4	31.5	18.7
2 Refinery throughput	54.3	56.3	37.8	38.9	3.8	3.0
3 Production of petroleum products	51.1	52.9	35.1	36.3	3.6	3.5
	(Billion cubic meters)					
4 Naural gas production	18.3	19.4	13.1	14.6	5.7	11.8

* Provisional. @ April-November.
$ Does not include LPG Production from fractionator.

which are under consideration of the Government. Under the Joint Venture Exploration Programme, 22 bids for seven blocks have been received which are under evaluation. The joint ventures will be formed between the two national oil companies viz., Oil and Natural Gas Corporation Limited and Oil India Limited and the foreign and Indian companies. Major difference between the fiscal terms for the joint venture programme as compared to the earlier exploration rounds is that ONGC/OIL will take a participating interest between 25 to 40 per cent from the beginning of the contract and the exploration period will be for a maximum period of six years.

35. The Government has offered discovered medium and small sized oil and gas fields for development to private companies for accelerating production. In the first offer of the discovered fields made in August 1992 for development of 31 small and 12 medium sized fields, a total of 117 bids were received. Government approved the award of contracts for 13 small sized and 5 medium sized fields for which contracts have already been signed. To upgrade geological data on sedimentary basins, the Government has invited bids from companies to carry out speculative surveys. So far two rounds of speculative surveys have been announced.

36. The Government is encouraging acquisition of exploration and development acreages abroad by national oil companies. Oil and Natural Gas Videsh Limited (a wholly owned subsidiary of ONGC) has a venture in offshore Vietnam, where gas discoveries have been made. The Government has also approved a proposal of ONGC Videsh Limited to take a participating interest in a venture in Egypt, currently held by a consortium led by British Gas, UK.

37. The refining capacity in the country was 53.4 million metric tonnes per annum (MMTPA) at the end of 1994-95, which has increased to 57.4 MMTPA till December, 1995. Considering the proposed expansion of existing refineries and based on the Letters of Intent issued till December 1995 to various parties, the refining capacity is expected to increase to 135 MMTPA for meeting the estimated demand of 102 MMTPA of petroleum products by 2001-02. As a part of a liberalisation programme in the hydrocarbon sector, Government has issued Letters of Intent (LOI) to 11 private sector parties for a total refining capacity of 60 MMTPA of which six LOIs with a total refining capacity of 23.3 MMTPA are of Export Oriented Units. These LOIs are in addition to the expansion in the existing refineries or the joint venture companies that are being put up by Public Sector.

38. During 1994-95, the consumption of petroleum products was 65.5 million tonnes, showing a growth of 7.7 per cent over the previous year. Though the overall consumption of petroleum products witnessed moderate growth during 1994-95 the consumption of LPG, MS, HSD and FO showed substantially higher growth rates. During April-November 1995, the consumption of petroleum products grew by 9.5 per cent over April-November 1994 (Table 9.9). The gross imports of crude oil and petroleum products at 41.3 million tonnes in 1994-95 was 3.7 per cent lower than in 1993-94. The value of POL imports during 1994-95 was Rs.17,838 crore as against Rs.17,730 crore during 1993-94. The gross imports of POL during April-November 1995 was 29.73

million tonnes, valued at Rs.13879 crore as against the import of 27.31 million tonnes, costing Rs.11,592 crore during April-November 1994.

39. To improve the supply conditions and to reduce the fiscal burden owing to sale of subsidised petroleum products, the Government has decanalised the imports of kerosene, LPG and LSHS and set up a Parallel Marketing System (PMS) for Liquified Petroleum Gas (LPG), Superior Kerosene Oil (SKO) and Low Sulphur Heavy Stock (LSHS) since February 1993. Under this system, private parties are allowed to import and market LPG/SKO/LSHS through their own distribution networks at market determined prices. The Government announced a reduction in import duties on LPG in January 1994 from 85 per cent to 25 per cent, to facilitate the operations of the PMS. This duty was further modified to 15 per cent, with a 10 per cent countervailing duty in the budget for 1994-95. Safeguards have been incorporated into the system to prevent diversion of the LPG and SKO marketed by public sector companies into PMS. The private sector has been allowed to invest in the development of infrastructure for petroleum marketing. Private investment has been invited for setting up and operation of depots, tank forms, import facilities, product and crude pipelines etc.

40. To inform and educate the members of the public about the credentials and credibility of parallel marketeers of LPG and kerosene, a system of rating has been introduced from June 1995. Every existing parallel marketeer has to get himself rated through one of the nominated rating agencies before undertaking activities under parallel marketing of LPG and kerosene. Till November 15, 1995, 51 parties of LPG and 44 parties for kerosene have been rated.

41. In order to make policies in the energy sector environmentally benign, a number of steps have been taken. The Government has formulated a plan for supply of unleaded/lowlead petrol throughout the country in phased manner. Government has introduced unleaded petrol from April 1995 in four metropolitan cities and at selected highways to mitigate the pollution menace for cars fitted with catalytic converters. It has further been decided to introduce unleaded petrol in all State capitals/UTs by the year 1998, and throughout the country by the year 2000. Unleaded petrol has also been introduced in the Taj Trapezium Area and the LPG wait list is being cleared expeditiously so as to minimise pollution in this area. Half per cent low sulphur diesel would be introduced in four metropolitan cities and at Taj Trapezium Area with effect from April 1, 1996. Subsequently, 0.25 per cent low sulphur diesel would be introduced from April 1, 1999. In order to improve the quality of diesel, desulphurisation projects are being undertaken by the various refineries in the country. With a view to develop a comprehensive long term perspective plan for hydrocarbon sector and to meet the challenges that may emerge by the year 2010, Government has set up a Reforms Committee to study and suggest reforms in the petroleum sector.

TABLE 9.9
Consumption of Petroleum Products**

	1993-94	1994-95*	April-November* 1994	April-November* 1995	Change over previous year 1994-95	Change over previous year 1995-96@
	(Million tonnes)				(per cent)	
1 Light distillates	10.6	11.6	7.4	8.4	10.1	13.4
of which						
(a) Naphtha	3.2	3.4	2.1	2.4	6.6	13.2
(b) LPG	3.1	3.4	2.2	2.4	10.3	10.5
(c) Mogas	3.8	4.1	2.7	3.1	8.1	12.9
2 Middle distillates	38.2	41.0	26.6	29.1	7.4	9.4
of which						
(a) Kerosene	8.7	9.0	5.9	6.1	3.0	3.4
(b) Diesel oil	25.9	28.3	18.3	20.6	9.2	12.6
3 Heavy ends	12.1	12.9	8.4	8.9	6.5	6.3
of which						
(a) Fuel oil	9.2	9.9	6.5	7.0	7.6	6.8
Total	**60.8**	**65.5**	**42.4**	**46.5**	**7.7**	**9.5**

* Provisional.
@ April-November.
** Excluding Refinery Boiler Fuel (RBF).

42. A number of steps have been taken for promoting the conservation of petroleum products. These include improving energy efficiency of refineries, increasing fuel efficiency in the transport sector, introduction of Compressed Natural Gas (CNG) as fuel in the road transport sector, upgradation of lubricants, replacement of inefficient boilers and furnaces and promotion of fuel efficient equipment and practices in the industrial sector, rectification of irrigation pumpsets in the agriculture sector, development and promotion of fuel efficient kerosene and LPG stoves and hurricane lanterns in the domestic sector, and launching of multi-media awareness campaigns and imparting of education and training to various target groups of oil users.

Renewable Sources of Energy

43. Renewable energy sources have the potential to meet the energy requirements of people in remote rural areas as well as to produce grid quality power to augment the installed power generation capacity. Major programmes launched for the development and utilisation of new and renewable sources of energy include programmes for the development of biogas, biomass, improved chullahs, solar photovoltaics, solar thermal, wind power, micro hydel and energy from urban/municipal and industrial waste. These programmes have been revamped, with greater emphasis laid on market development and commercialisation. A three fold strategy is being pursued for the promotion of renewable sources of energy. This includes providing budgetary resources of the Government for demonstration projects; extending institutional finance from Indian Renewable Energy Development Agency (IREDA) and other financial institutions to commercially viable projects; promoting private investments through fiscal incentives such as tax holidays; depreciation allowance; exemption from excise duty and central sales tax; custom duty concessions and attractive policies by SEBs for wheeling, banking and remunerative prices for the power generated from renewable energy sources.

44. Until the end of March 1995, a capacity of about 350 MW through wind power generation had been established, including private sector projects. During the year 1995-96, 400 MW of wind power generation capacity is expected to be installed through private sector investments of which 207 MW has been installed by October 1995. The package of incentives for wind power generation included 100 per cent accelerated depreciation; loans from IREDA at an annual interest rate of 14.5 per cent; tax holiday for five years; exemption from excise duty; and exemption/reduced rate for custom duty on imports of wind turbines.

45. A capacity of 119 MW of small hydro power projects has been commissioned upto March 1995. The target for the year 1995-96 is for initiating additional Small Hydro Power Projects with aggregate capacity of 25 MW. Projects with a total capacity of 2.5 MW have been commissioned by October 1995. Capital subsidy being provided for this sector has been replaced by interest subsidy during 1995-96 to ensure wider coverage within limited budgetary resources. The measures announced to promote Small Hydro Projects in the country include a capital subsidy scheme for public sector projects upto 50 KW capacity in North Eastern region, Andaman & Nicobar and hilly regions, interest subsidy to a maximum of 5 per cent so that the loan is available to private sector projects at 10 per cent for projects in hilly areas, North Eastern States and Andaman & Nicobar Islands and at 12.5 per cent in rest of the area of the country. Other measures include permission to the private sector to set up these projects on Build, Own and Operate (BOO) basis.

46. In order to tap the potential of 3500 MW of surplus power from bagasse in 420 sugar mills in the country a programme on bagasse based co-genration has been launched under which 12 demonstration projects are being set up with partial budgetary support. An interest subsidy scheme has been launched during 1995-96 to cover large number of sugar mills under which 2 per cent interest subsidy is provided. A scheme for utilisation of agricultural biomass available at Taluka level for decentralised power generation to meet the power requirements of the people locally has been launched during the year. A national programme on recovery of energy from urban and industrial waste has been launched which provides financial support for preparing DPR, interest subsidy through financial institutions and investment subsidy for private sector projects.

47. Special emphasis is being given to rural energy programmes particularly for setting up of Biogas Plants and Improved Chullahs in rural areas. Over 21.88 lakh biogas plants had been set up in the country till the end of March 1995 under the National Project on Biogas Development (NPBD). The target for 1995-96 has been fixed at 1.60 lakh plants, of which over 47,000 plants have been installed upto November 1995. Under Improved Chullah Programme, 196 lakh improved chullahs were installed till March 1995. Against the target of installing 25 lakh improved chullahs during 1995-96, 6.43 lakh have been installed till November 1995.

48. In the areas of Solar Photovoltaics, solar lights, Solar Photovoltaic pumps, village level power packs and Solar Photovoltaic Lanterns are being promoted. Over 29000 Solar Domestic lights, 36,000 Solar Lanterns, 30,000 Solar Street Lights and 141 Solar Power Packs have already been installed till

March 1995. Against the target of 1,000 Solar Domestic Lights, 35,000 Solar Lanterns and Solar Power Packs of 30 KW capacity for 1995-96; 4738 Solar Domestic Lights and 22,239 Solar Lanterns have been installed till December 1995. A major programme on the Solar Lantern has been launched under which 35,000 Solar Lanterns are proposed to be provided during 1995-96. Under the commercialisation approach adopted from the year 1993-94, subsidy on solar water heaters and solar cookers has been withdrawn and support is now being provided for publicity awareness, after sale service and establishing show room for promotion of these devices through the State Governments associating the manufacturers. The Indian Renewable Energy Development Agency Limited (IREDA), which was set up in 1987 has expanded, its activities substantially, with support from the World Bank and the Global Environment Fund (GEF) and bilateral assistance from DANIDA, SDC and the Netherlands. The project titled "India Renewable Resources Development Project" has been initiated, consisting of three projects on Windfarm Development, Photovoltaic Market Development and Small Hydro Power Development, involving World Bank/GEF assistance to the tune of US $ 195 million. IREDA has organised several entrepreneur development programmes to attract entrepreneurs and project developers. Till March 1995 IREDA had sanctioned 463 renewable energy projects costing Rs.502 crore, for manufacture and installation of New and Renewable Sources of Energy (NRSE) systems and devices. During the year 1995-96, 143 renewable energy projects with a total loan amount of Rs.349 crore has been sanctioned by December 1995.

49. Policy measures have been announced to encourage direct foreign investments and collaborations in the fields of renewable sources of energy. A policy Planning Cell has been set up in the Ministry of Non-Conventional Energy Sources to prepare policy for the promotion of renewable energy and for drafting necessary enabling legislation to implement the policy.

Telecommunications

50. India has a network of over 20,455 exchanges with a capacity of 128.4 lakh lines and 106 lakh working connections as on November 30, 1995. The network grew at a rate of 22.8 per cent during 1994-95. A switching capacity of 22.3 lakh lines was added during 1994-95, 22.1 per cent more than 1993-94. About 25 per cent of the total capacity was added in Delhi, Bombay, Calcutta and Madras.

51. The annual growth rate of providing new telephone connections has been increasing steadily from 9.8 per cent in 1988-89 to 18.3 per cent in 1993-94. During 1994-95, it recorded a growth of 22 per cent. The number of new telephone connections provided in 1994-95 was 17.7 lakh. The number of people waiting for new connections as on March 31, 1995 was 21.53 lakhs, 13.8 per cent lower than the number in the previous year. The Department of Telecommunications has taken up the challenge of providing public telephones in all villages. During 1994-95, 47,659 villages were provided with telephone facilities. This was 44.4 per cent more than the achievement in 1993-94. During 1994-95, 171.5 lakh conductor kilometers (LCKMS) of cables were laid, 25 per cent more than in 1993-94.

52. The Eighth Plan outlay approved for the DOT (including MTNL) is Rs. 23,946 crore. In the first three years of the Plan, 1992-93, 1993-94, and 1994-95 the total plan expenditure incurred on developmental schemes was Rs. 17,253 crore, 73.2 per cent of which was financed by internal resources and 21.4 per cent through market borrowings (telecom bonds). There was a small amount of budgetary support representing 1.1 per cent of the total investment during the first two years and no budgetary support was taken in 1994-95. In the remaining two years of the Plan, it is estimated that total investments envisaged will increase the plan expenditure to Rs. 38,733 crore. Of this, 76 per cent will be financed through internal resources.

53. Until 1991 telecom equipment production was reserved for public sector, although opened to some extent to the private sector in 1984 by allowing private participation in the production of customer premises telephone equipments. The liberalisation of the economy since July 1991 has placed the entire telecom equipment manufacture industry under the delicensed and dereserved sector and has allowed automatic approval of foreign equity upto 51 per cent by foreign investors in the manufacture of all telecom equipments.

54. The National Telecom Policy (NTP) was announced in May 1994. The most important feature of the policy is provision for participation of companies registered in India in basic telecom services with a view to supplementing the efforts of the Department. The other major features of the NTP are : telephone should be available on demand by the 1997; all villages should be covered by 1997; installation of one Public Call Office (PCO) per 500 persons in urban areas by 1997; introduction of value-added services available internationally in India within the Eighth Plan period; the country emerging as a major manufacturing base and a major exporter of telecom equipment and encouragement to pilot projects to access new technologies in both basic and value-added services (BOX 9.1).

55. The guidelines for private sector entry in basic telecom services have been announced. Companies providing basic telephone services will have to maintain a balance in their coverage between urban and rural areas. They will have to operate under agreed tariff and revenue sharing arrangements. In case a joint venture company between an Indian and foreign company is formed for providing basic telecom services, not more than 49 per cent foreign equity is permissible.

56. In January, 1995 tenders were invited from companies registered in India for award of licences for providing basic telephone services for 15 years in the various areas of the country. Sixteen companies submitted their offers for 20 circles (service areas). In the first round of bids only five Service Areas could be finalised for grant of licence. In the second round of financial bids opened on 1.1.1996, another five Service Areas are likely to be finalised soon. In all circles, Department of Telecommunication will also continue to be a provider of basic telephone services.

57. On the basis of licences issued in 1994 for four metro cities viz. Delhi, Bombay, Calcutta and Madras, cellular mobile phones service has already started on a commercial basis in these cities. Tenders were also invited for award of licences for providing cellular mobile telephone services for 10 years in various areas. Letters of Intent have been issued to 11 successful bidders to operate in 17 circles (service areas). The other circles would also be covered shortly. Thus the cellular mobile telephone service is likely to be operational almost over the whole country by the end of 1996-97.

58. Tenders were first invited to operate Radio Paging Service in 27 major cities of the country in 1992. Two to four operators were permitted depending on the size of the city. Ninety two licences against ninety five slots have been issued. Tenders for Radio Paging Services were invited for 56 slots in 1994 of which 25 licences have been issued and Letter of Intent issued to 10 companies. The Radio Paging service has now become operational in 23 major cities and it is expected that the radio paging service will be available in most cities throughout the country by the end of 1996-97.

59. Tenders were called for franchises of public mobile Radio Trunked Service (PMRTS) in various cities all over the country and letters of intent have been issued for operation of PMRTS in 400 MHz band in 87 cities. Fourteen licences had already been issued.

60. Value-added services such as Electronic Mail, Voice Mail, Audiotext, 64 kbps data service using VSAT, Videotext, Video Conferencing and Credit Card Authorisation Services have been opened to the private sector. For operation of E-Mail, Voice Mail and 64 Kbps data services using VSAT, twelve, five and thirteen licences have been issued respectively. These services have become operational on commercial basis in many areas of the country.

61. The government proposes to set up a statutory Telecom Regulatory Authority of India (TRAI) to ensure fair competition and to protect and promote the interests of consumers. The establishment of TRAI will promote orderly and healthy growth of telecommunication infrastructure in the multioperator situation arising out of opening up of basic as well as value added services in which private operators will be competing with Government operators. Legislation for constituting TRAI is being processed by the Government.

Box 9.1

Reforms in Telecommunications

- Customer premises equipment industry opened to the private sector in 1984.
- Value-added services (VAS) opened to the private sector in 1992. These services include Cellular Mobile Phones, Radio Paging, Electronic Mail, Voice Mail, Audio Text Services, Video Text Services, Data Services, Video Conferencing, and Credit Card Authorisation Services.
- The National Telecom Policy (NTP) was announced in May 1994 with the main objective of providing telephone on demand reaching all the villages in India at the earliest possible and at affordable and reasonable prices; to provide widest range of word standard level telecom services at reasonable prices, to ensure India's emergence as a major manufacturing base and major exporter of telecom equipment and protecting the defence and security interests of the country.
- For value added services, Government has permitted maximum foreign equity of 51 percent and this limit is fixed at 49 per cent for basic services, cellular mobile and radio paging.
- Licences to private sector for entry into basic telecom services are to be on circle basis.
- The Government has decided to set up a statutory Telecom Regulatory Authority of India to separate the regulatory function from policy formulation and operational functions. Its terms of reference are: price regulation, ensuring technical compatibility among different service providers, fixation of access charges, protection of consumer interest, resolution of disputes between service providers and ensuring time frames for making available local and DOT long distance circuits between service providers.

Posts

62. The National Postal Network with more than 1.5 lakh Post Offices by March 1995, is the largest in the World. The long term objective is to locate a post office within 3 kms of every village and to provide the facility of a letter box in every village with a population of over 500. As on 31.3.1995 it is estimated that there are approximately 1,09,800 Gram Panchayat Villages which do not have a Post Office. During the first three years of the Eighth Five Year Plan 1306 extra departmental post offices and 262 departmental sub post offices have been sanctioned. The Department of Post now seeks to accelerate this effort by providing basic postal facilities on a contractual basis by utilising the existing infrastructure of Panchayats in these areas. The Panchayat Sanchar Sewa Scheme, formulated in this regard, has the twin advantage of reducing dependence on budgetary resources for expanding postal facilities to needy areas and generating employment opportunities in such areas.

63. Taking note of the rapid changes in information and communication technology, the Department of Post has given a new thrust to its programme of modernisation for providing new value added services to customers. In this connection Department has embarked upon a programme for computerising services provided across the counter in post offices using PC based multi-purpose counter machines (MPCMs) in all post offices with more than five counters. 1852 machines have been supplied so far covering around 700 selected post offices and another 2500 machines are to be installed by 1997.

64. Department of Post has also taken up projects for computerisation of other aspects of postal operations like mail processing, savings bank and materials management. During 1994-95 Metro Channel Service linking the six metros, the Rajdhani Channel linking Delhi with most of State Capitals, and a Business Channel with exclusive treatment to pin-coded business mail have been introduced. Green Channel, which gives priority to local mail has also been introduced. A new channel-periodicals channel - has been introduced in major cities to ensure timely transmission of daily newspaper and periodicals. An integrated automatic mail processing plant was set up in Bombay in April 1993 and another is in the process of being set up in Madras. Such plants at Delhi, Bangalore and other major centres are under consideration.

65. Money order services provide a socially useful means of cash transfer. In order to speed up money order transmission, a project for the use of satellite channels is under implementation. 26 VSAT (Very Small Aperture Terminals) centres were successfully set up in 1994-95, and 49 more such centres are being installed in 1995-96. The network of VSATs is being used for providing value added services like hybrid mail involving open message and data transfer and corporate money order service, involving corporate cash transfer, introduced last year.

66. Speed Post traffic continues to show healthy annual increase. The accent in 1994-95 was on consolidating existing clientele by offering additional facilities like proof of delivery. Other facilities proposed to be extended include bulk discounting, packaging services, insurance and the facility of refund in cases of delay in delivery of speed post articles. To improve monitoring of speed post articles from the point of receipt to the point of delivery, the Department of Post is setting up a Track and Trace System. In 1994-95 this facility has been introduced for articles emanating to and from Delhi and Bombay and it is proposed to be extended to six more major cities during 1995-96. During 1994-95 the total revenue earned by speed post was Rs.54.2 crore and the traffic generated was 124.7 lakh articles.

67. Postal Life Insurance (PLI) consists of over 21 lakh policies with a sum assured of Rs.4776 crore. During 1994-95 the Government has extended PLI to cover rural areas and the target is to generate a business of Rs.500 crore sum assured through the Rural PLI Scheme.

68. Post Office Savings Bank (POSB) operates through the wide network of post offices, of which 89 per cent are located in rural areas. The total outstanding balance during 1994-95 through various savings schemes was Rs.78,908 crore and operations of POSB are now being computerised. Mahila Samridhi Yojana scheme introduced in October 1993, in order to empower adult rural women financially, has generated Rs.81.2 crore in 84.4 lakh accounts as on 31.3.1995. During 1995-96 the Department has introduced a new value added service i.e. Premium Savings Bank Service in order to facilitate savings bank account holders to access cash more easily. This facility, through a Smart Card based pilot project initially covers 15 post offices in Delhi from November 1995 and is proposed to be extended to 6 more cities from 1996-97.

69. It is recognised that the country's postal service must not only meet growing market demand but should also have social objectives. Rigid norms of commercial viability have not been consistently followed and the system is now operating on a deficit. In 1994-95, the Department incurred a deficit of Rs.337.5 crore. Establishment expenses account for 80 per cent of the total expenditure. Redeployment and rationalisation of manpower are being undertaken to contain establishment expenses.

70. The Government has been considering a reduction in its monopoly control on carriage of

letters, thus paving the way for according a formal status to the Courier industry. In yet another move towards liberalising state-owned postal services, the Government is considering to allow the private sector to get into the distribution of postal stationery as an agency function.

Railways

71. The Indian Railways consist of an extensive network spread over 62,660 kms-comprising Broad Gauge (39,612 kms), Meter Gauge (19,210 kms) and Narrow Gauge (3,838 kms). Electrified networks with 11,793 kms. account for 18.8 per cent of the total Route Kilometrage. The thrust areas identified for the Eighth Plan period include replacement and renewal of over aged assets; augmentation of terminal and rolling stock capacities; gauge conversion and electrification. Indian Railways completed gauge conversion of 1,351 kms. in 1992-93, 1,619 kms. in 1993-94, 1805 kms. in 1994-95 and have set a target of 1,000 kms. for 1995-96

72. During 1994-95, the revenue earning freight traffic moved by the railways was 365 million tonnes. This was only 1.7 per cent higher than the performance in 1993-94. The freight traffic carried during April-November 1995-96 at 245.3 million tonnes, increased by 5.7 per cent over April-November, 1994. The growth has mainly been in coal, raw materials for steel plants, foodgrains, fertilisers, iron ore for export, POL, etc. However, there is a major decline in cement and pig iron and finished steel from steel plants (Table 9.10).

73. Existing modal shares between rail and road do not conform to optimal shares as judged by least economic cost. The railways have devised a new marketing strategy following economic reforms, to attract freight traffic now going by road which is more energy intensive and less environment friendly. The main thrust areas of the new marketing scheme are given in Box 9.2.

74. The railways employ about 16 lakh workers, the largest number for any undertaking in the country. A comprehensive plan for human resource development is required to upgrade skills, retrain workers and achieve higher productivity. Indian Railways have taken certain concrete steps in this direction such as training and development of management, strategy for improvement in performance and productivity of assets. UNDP is

TABLE 9.10
Performance of the Railways

	1993-94	1994-95*	April-November* 1994	April-November* 1995	Change over previous year 1994-95	Change over previous year 1995-96@
						(per cent)
Total revenue earning freight traffic (million tonnes)	358.7	365.0	232.2	245.3	1.7	5.7
(i) Coal	167.0	172.4	110.4	115.0	3.2	4.1
(ii) Raw Materials for steel plants (excl.coal)	33.4	36.6	23.3	25.0	9.6	7.3
(iii) Pig iron & finished steel from steel plants	12.1	12.0	7.6	7.6	-0.5	-0.4
(iv) Iron ore for export	10.5	9.8	6.4	6.5	-6.2	1.6
(v) Cement	32.5	31.5	20.5	20.2	-3.3	-1.2
(vi) Foodgrains	26.7	20.7	12.6	16.4	·22.3	29.6
(vii) Fertilizers	19.5	21.5	13.5	14.7	10.2	8.8
(viii) POL	26.0	27.7	18.1	19.1	6.8	5.3
(ix) Balance (other goods)	31.1	32.8	19.6	20.8	5.3	6.1
2 Net tonne kilometers (billion)	252.4	249.6	159.8	172.5	-1.1	7.9
3 Net tonne kilometers per wagon per day (broad gauge)	1506.0	1590.0	1479.0	1657.0	5.6	12.0
4 Passenger traffic originating (million) $	3708.0	3914.9	1921.2	1989.5	5.6	3.6
5 Passenger kilometers (billion) $	296.2	319.4	157.1	161.8	7.8	3.0

* Provisional. @ April-November. $ April-September

Box 9.2
Features of Railway's New Marketing Strategy

- The Container Corporation of India (CONCOR), a public sector undertaking, will provide door to door services for domestic users, transportation in bulk for small customers and international transport in International Standards Organisation (ISO) containers.
- Introduced trains connecting Tughlakabad with Bombay, Jawaharlal Nehru and Madras ports for the movement of export containers on scheduled time.
- Leasing out brake van space to customers, so that they can have an assured transportation between fixed points.
- Introduction of Own Your Wagon Scheme to invite private sector investment for the ownership of Railway wagons and thereby supplement the resources available with the railways for meeting the transport requirements of various sectors of the economy.
- Introduction of long distance special parcel service between Bombay and Delhi, Delhi-Mughalsarai and Wadi-Bunder-Shalimar.
- Simplification of rules in key areas like free acceptance of indents, supply of wagons, single window booking systems and faxing of invoices to the destination.
- Rebate of freight for utilisation of wagons in the empty flow direction.
- Closure of yards to facilitate faster movement.

assisting Indian Railways for organisational development and system changes in order to improve efficiency, productivity and quality. The project focuses on major areas like total quality management, management information systems, marketing, work force motivation, project management and restructuring. The budgetary support to the Railways declined continuously from 75 per cent of the Railways Plan outlay in the Fifth Plan to 42 per cent of outlay in the Seventh Plan and further to 23 per cent of the outlay during the first four years of the Eighth Plan. The declining budgetary support has adversely affected the Railway's plan for acquisition of locomotives, coaches and wagons.

75. The alternative source for financing the Railways plans, including market borrowings, have also become uncertain and expensive. The Railways, therefore, have been forced to rely more on internal generation, which is estimated to be around 55 per cent in 1995-96.

Civil Aviation

76. The activities of Civil Aviation are broadly divided into three areas: operational, infrastructural and regulatory-cum-developmental. On the operational side, Indian Airlines Limited, and private air lines (Scheduled and Non-Scheduled) provide domestic air services. Air India Limited provides international air services. Indian Airlines Limited also provide air services to neighbouring countries. Pawan Hans Limited provides helicopter support services, primarily to the petroleum sector. Infrastructural facilities are provided by the Airports Authority of India (AAI). The two authorities viz. International Airports Authority of India (IAAI) and the National Airports Authority (NAA) have been merged with effect from 1-4-1995 to form a single authority viz. Airports Authority of India as a result of enactment of Airport Authority of India Act, 1994. The regulatory and developmental functions are looked after by the Ministry of Civil Aviation and the offices of the Directorate General of Civil Aviation.

77. The liberalisation process in civil aviation took wing in April 1990 with the cargo open skies policies which allowed international airlines to operate cargo flights without restrictions and to charge rates without reference to the Directorate General of Civil Aviation. The liberalisation policy benefited exporters from the timely availability of capacity and a greater choice of rates and the economy gained through larger flow of trade. The Air Taxi Operators Scheme launched in 1990 played a feeder role to Indian airlines as non-scheduled operators. Only four parties ventured in this area at that time due to the restrictive environment.

78. The Air Corporation Act, I953, repealed on March 1, 1994, ended the monopoly of Indian Airlines, Air India and Vayudoot over scheduled air transport services. Six private operators, who were hitherto operating as air taxis, have since been granted scheduled airlines status. In addition, 19 air taxi operators have been given permit for charter/ non-scheduled air transport services.

79. The competitive environment on domestic services has been, in effect, existent since April, 1993. By November 1995, 28 aircraft in the 120 plus category, belonging to private air taxis, were in operation. The natural consequence of creating a competitive environment in this sector was that,

by March 1995, 35.6 per cent of the market was being catered to by private air taxis. The number of passengers carried by air taxi operators has increased from 15,000 in 1990 to 4.1 lakh in 1992, 29.2 lakh in 1993 and 36 lakhs during 1994. Thus, Indian Airlines, on the one hand, had to share the market on its profitable trunk routes, on the other hand it faced the threat of loss of critically skilled personnel to private operators who offered much higher emoluments. This affected its ability to optimally deploy its existing aircraft capacity. Indian Airlines Limited, has also geared itself to the challenging task of adapting itself to a competitive environment. Several measures have been taken, mainly centered on making the organisation adopt a marketing approach to decision making and considerably improve the quality of its product. It has improved its passenger facilities both on board and on the ground, on time performance, flight safety measures and has also increased employee participation to provide better services.

80. The year 1994-95 continued to be a difficult year for Indian Airlines Ltd. but despite the stiff competition, it has been able to maintain its market share of 63.7 per cent. The year 1994-95 witnessed Operating profit of Rs.36.24 crore which is after a lapse of two years, and a net loss of Rs.188.73 crore which is Rs.69.73 crore less compared to 1993-94. The company has been able to arrest its losses mainly due to enhanced operations to international sectors especially at Gulf routes. Moreover, the Government has set up a Committee of experts to work out the long term turnaround strategy of the company. Consequent to the imposition of surcharge on the import of fuel against Special Import Licence, import of fuel has become uneconomical and hence discontinued and the substantial benefit which would have accrued to Indian Airlines during 1995-96 has been annulled.

81. During 1994-95 the company has increased its fares with effect from 25th July, 1994 ranging from 10 to 20 per cent. But even this was not sufficient to meet with spiralling costs of fuel and oil, airport landing and parking fees, interest charges, insurance, depreciation, spare parts repairs etc. which account for about 87 per cent of the total cost and is beyond the control of the company. Following the all round increase in costs, the company revised its domestic rupee fare with effect from October 1, 1995 by 20 per cent on an average and revised its dollar fares with effect from January 1, 1996. The revenue and expenditure of Indian Airlines Limited during April-February, 1994-95, increased by 14 per cent and 8.9 per cent respectively. The net loss during this period was Rs.189 crore, as compared to Rs.235 crore during April- February, 1993-94. During April-September 1995 total revenue of Indian Airlines Limited increased by 15.52 per cent whereas the total expenses increased by 11.52 per cent as compared to the corresponding period of the previous year, thereby bringing down the loss from Rs.136 crore to Rs.113 crore. Endeavour has been made to enhance the operation of international sectors especially Gulf routes which yields more profits. At the same time a major reduction has been achieved in outside repairs and services, by operation of Jet Engine Overhaul Shop.

82. The net profit of Air India Ltd. for the year 1994-95 was about Rs. 41 crore as against Rs. 200 crore in 1993-94. However the company has incurred a loss of Rs. 69.5 crore during the period April-September, 1995. During the year 1994-95 total revenue of the company was Rs. 2989 crore as compared to Rs. 2581.8 crore for 1993-94 representing an increase of 15.8 per cent; Likewise the total operating expenditure of the company was Rs. 2920.1 crore as compared to Rs. 2460 crore for 1993-94 representing an increase of 18.7 per cent. The main reasons for drop in profits have been the factors such as frequent industrial unrest leading to cancellation of flights and disruption of flight schedules; incidence of depreciation and interest on account of acquisition of four 747-400 aircraft; increase in expenditure by 18.7 per cent due to insurance, fuel oil, landing, lease, rental and hire charges; increase in allowances payable to the employees and payment of additional perquisites as per the Memorandum of Understanding reached with the unions, associations, guilds; outbreak of plague epidemic in October, 1994 resulting in large number of flight cancellations and cancellations of booking for subsequent few months and the drop in yield by 18.6 per cent as compared to 20.1 per cent in previous year. Air India's overall load factor of 57.3 per cent is low compared to other international airlines. Its share of international traffic originating from India has come down from 42 per cent in 1981 to 35 per cent in 1991 and 20.4 per cent in 1994.

83. Air India has inducted four B 747-400 aircraft and opened up new destinations like Perth, Johannesburg and Durban. More operations are being diverted to Madras, Thiruvananthapuram, Bangalore, Cochin etc. Massive programme of fleet renewal has been taken up. Though their profits have dwindled this year, because of acquisition of new aircraft and increase in the cost of operations, yet the health of airlines is improving. To meet the growing air transport requirements between India and various countries, fifteen countries have recently signed Air Services Agreement with India and about two million seats per year were granted as additional entitlements. This would help in generating more revenue by way of more number of services to/from India and also increase the inflow of tourists.

84. Pawan Hans Limited (PHL) basically provides helicopter support services to the petroleum sector including ONGC and Oil India Limited and connects remote and inaccessible areas. It also provides air support services to several customers which includes NTPC, Government of Punjab and Madhya Pradesh, Lakshadweep Administration, GAIL, BSF and also caters to private sector. The total revenue flying hours during 1994-95 was 18,577, compared to about 18,127 during 1993-94. The revenue earnings and net profits during 1994-95 were Rs. 143.2 crore and Rs.40 crore respectively, compared to Rs.131.4 crore and Rs.33.6 crore respectively in 1993-94. The flying hours during April-September, 1995 were 9,265 and revenue and net profit were Rs.72.8 crore and Rs.53 crore respectively.

85. The International Airports Division (IAD) of Airports Authority of India (AAI) manages, operates and develops the five international airports at Bombay, Calcutta, Delhi, Madras and Thiruvananthapuram. Net profit of IAD at Rs.97.7 crore in 1994-95 was higher by 94.6 per cent of the net profit of Rs.50.2 crore during 1993-94. During 1994-95 expenditure grew by 10 per cent, whereas revenue increased by 26 per cent. Passenger and Cargo traffic at 228.9 lakh and 494 lakh tonnes during 1994-95 were higher by 9.2 per cent and 12.9 per cent respectively than in 1993-94. IAD has declared a dividend of Rs. 15.3 crore (25 per cent) for 1994-95, as against Rs.14.7 crore (24 per cent) for 1993-94.

86. During April-September 1995, the revenue and expenditure of IAD increased by 14.9 per cent and 14.7 per cent respectively, thus accruing the net profit of Rs 71.6 crore which was 24.2 per cent higher than in April-September, 1994. The number of passengers and cargo handled by it during the period have increased by 11 per cent and 12.2 per cent respectively. It has undertaken construction of terminal complexes at various international airports and improvement and upgradation of runways and terminal buildings. The new domestic terminal at Calcutta commenced in January 1995. The work at international terminal (Phase III) at Bombay is in progress.

87. The net profit of National Airports Division (NAD) of Airports Authority of India at 94.15 crore (before tax) in 1994-95 was 76.3 per cent higher than in 1993-94. During April - September, 1995, the revenue increased by 18.7 per cent and expenditure by 31.2 per cent, resulting in profit of Rs. 56 crore (before tax) as compared to Rs.60 crore during April-September, 1994.

88. A number of projects like modernisation of air traffic services at Bombay and Delhi airports, installation of airport surveillance radar at Ahmedabad, Guwahati, Hyderabad and Thiruvananthapuram, development of 12 model airports for upgradation of facilities and improvement in the quality of services at airports have been taken up. Investments in airports of the North Eastern region are not economical; yet a large number of works have been taken up there. Sixty per cent of investment on projects which have the prior approval of the NEC, is borne by the North Eastern Council. Development work in other remote areas like Jammu & Kashmir, Lakshadweep, Himachal Pradesh, Andaman & Nicobar are also being taken up.

89. The airport infrastructure demands heavy investments, large expenditure on servicing, replacements and renewals. Keeping in view resource constraints, domestic and foreign investors including NRIs, have been invited to participate in the development of new international airports and the expansion of infrastructural support at some other domestic airports. International Airports Divisions of AAI has also decided to privatise the ground handling at Delhi and Bombay in a bid to enhance efficiency, decongest airports and also to improve the craft turnaround time.

Road and Road Transport

90. With a network of two million kilometers India has the third largest road network in the world. Half of this is made up of unsurfaced roads. The National Highways network of 34,058 Km at the end of 1994-95 constitutes less than two per cent of the total road net work, but carries nearly 40 per cent of total road traffic.

91. It is estimated that road traffic, which accounts for 80 per cent of passenger traffic and 60 per cent of goods traffic, will account for 87 and 65 per cent of passenger and goods traffic respectively by the year 2000. To meet a traffic expansion of such magnitude, the National Highway network must be greatly improved. A large section has inadequate road pavement thickness. Other deficiencies are inadequate capacity, poor riding quality, weak and distressed bridges/culverts, congested city sections, too many railway level crossings, lack of wayside amenities and weak road safety measures. About 20 per cent of National Highways need widening from single to double lanes and about 70 per cent of two lane roads have to be strengthened, and selected corridors on national highways need conversion into Expressways. This is clearly an enormous task and needs massive investment and organisational resources beyond the capacity in the public sector. In the past, roads have generally been financed from budgetary sources and constructed by Public Works Departments. As the budgetary allocation is not adequate to meet the challenges stated above, the National Highways Act has been

amended to enable the levy of a fee on selected sections of National Highways. The Amendment of the National Highways Act to allow the private sector to construct and charge a fee will permit the private sector to participate in construction, maintenance and operation of roads on Build, Operate and Transfer (BOT) basis. Several reforms/measures taken by the Government to attract private sector participation are summarised in Box 9.3.

92. Consequent to the amendment of National Highway Act in 1995 to allow private sector participation, steps have been and are being taken to identify and take up the national highway projects through private sector financing. One project of Thane Bhiwandi bypass has already been awarded on BOT basis. Global tenders have been invited for five more national highway projects pertaining to bypasses/bridges on BOT basis. The National Highway Authority of India on behalf of the Government have invited global tenders from parties interested in conducting feasibility studies for the proposed super national highways which would connect major metropolitan areas and manufacturing towns with the major ports in India. These are going to be express ways on new alignments and are proposed to be built with the help of the private sector on Build, Operate and Transfer basis. 22 parties have sent their bids for conducting these feasibility studies.

93. Additional budgetary support is being obtained for the improvement of National Highways through loan assistance from international agencies such as the World Bank, Asian Development Bank and Overseas Economic Cooperation of Japan. The Government of India has also decided to activate the National Highways Authority, which will have an independent and autonomous status and will be entrusted with externally aided projects with a view to accelerate their pace of implementation.

94. The State Road Transport Undertakings operate a fleet of nearly one lakh buses employing 8.3 lakh workers. The undertakings, with a few exceptions, face serious financial constraints due to various factors such as the social commitment to operate even on uneconomic routes, absence of cost-based fare structures, overmanning, poor management and widespread inefficiencies.

95. The population, and consequently, the travel demand has been increasing at a geometric progression in Urban Areas. In many cities, the vehicle population has reached alarming proportions in relation to road network available. Given the high density of population and scarcity of land, it is almost impossible in big cities to increase the road capacity substantially and, therefore, it is not possible to accommodate the growing vehicle population and meet the travel demand. This has prompted the working out of alternative ways of meeting the increasing transport demand given the constraints of land and capital, and the need to control energy consumption, pollution and accidents. In consultation with the Government of the National

Box 9.3
Reforms in Road Sector

- Pathkar abolished by all State Governments and octroi by many of them to reduce overall transit time and to help free flow of traffic on roads;
- The Motor Vehicle Act, 1988 amended, which has come into force with effect from November 14, 1994 with a view to simplify procedures and to give more powers to the State Government in the matter of granting driving licences and permits for motor vehicles;
- Road sector declared an industry to facilitate borrowing on easy terms and to permit floating of bonds.
- MRTP provisions relaxed to enable large firms to enter the highway sector;
- National Highways Act amended to enable levy of a fee on national highways, bridges and tunnels.
- Customs duties on construction equipment reduced and procedures streamlined.

Reforms Contemplated

- Private sector participation including foreign investors is sought in the development of stretches of national highways and construct express ways on BOT basis for a period of 30 years.
- The traffic will be normally regulated by entrepreneure but to ensure free and unintrrupted flow of traffic, sales tax and octroi barriers will not be established on the express ways and the normal checks by the authorities will be conducted at the entry and exit points only.
- Development of the basic facilities for the traffic enroute, provision for developing and operating highway related facilities such as retaurants, motels, fuel stations, parking areas and other related commercial complexes would be allowed to be developed to enhance the viability of the project.
- The land acquisition and removal of utilities to be done by the Government.
- The Government does not intend to offer any guarantee and the entrepreneur is expected to examine the viablity of the project.

Capital Territory of Delhi, a project to introduce a High Speed Tram System has been identified. This can be undertaken with the assistance of the private participation. The High Speed Trams will operate on elevated tracks. Subsequently, this project could be extended to other metropolitan cities in consultation with the respective State Governments.

Shipping

96. Indian vessels carried about 33.6 per cent of the total sea-borne cargo during 1993-94. The share of Indian vessels in 1993-94 in POL was 61 per cent, in bulk carriers 20 per cent, and in liner traffic 9 per cent. Long term targets for Indian shares in bulk carrier and liner traffic are 50 and 40 per cent respectively. The fleet strength at the end of November, 1995 was 471 vessels of 7 million Gross Registered tonnage (GRT), against 438 vessels of 6.4 million GRT in October, 1994. Overseas trade during 1993-94 was 137 million tonnes against 122.3 million tonnes during 1992-93.

97. The Shipping Corporation of India (SCI) showed a better financial performance during 1994-95. Its gross tonnage as on October 31, 1995 was 3 million GRT (about 50 per cent of the total fleet). SCI's gross internal resources rose to Rs.353 crore in 1994-95, as against Rs.286 crore in 1993-94. Its net profit after tax at Rs.201 crore in 1994-95 registered an increase of 19 per cent over 1993-94. During April-September 1995, the profit after tax has been provisionally estimated at Rs.115 crore. There are two major public sector ship building yards, Hindustan Shipyards Limited, and Cochin Shipyards Limited. Due to various reasons i.e. high construction cost, heavy interest burden on the borrowings, low order book position, excessive manpower etc. these yards have been incurring losses. However, as a result of revival measures initiated by the Government in September 1993 the two yards have now shown a turnaround performance. Cochin Shipyard Limited has earned a net profit of Rs.11.2 crore in 1994-95 for the first time since its inception. Hindustan Shipyards has earned an operating profit of Rs.33.4 crore in 1994-95.

98. The International Safety Management (ISM) code, was adopted by the International Maritime Organisation (IMO) in November 1993. This code is to come into force in 1998 for passenger ships and tankers and by 2000 for other vessels. The shipping companies are required to provide special training to on shore staff and crew on board in order to implement this Code. The Directorate General of Shipping has constituted a Sub-Committee which is in dialogue with the shipping companies to implement the Code well before its due date.

99. In order to promote the development of Indian shipping, a new shipping policy was initiated in 1990-91. Several policy measures initiated since then are summarised in Box 9.4.

Box 9.4
Reforms in Shipping Sector

- Automatic approval is now given for i) Acquisition of all categories of ships except Crude Tankers and Offshore Supply Vessels (OSVs) by Private Shipping companies, ii) Acquisition of replacement tonnage.
- No approval is required for sale of ships and acquisition of ships from an Indian shipyard.
- Shipping companies allowed to retain sale proceeds of their ships abroad and utilise them for fresh acquisition.
- Shipping companies given freedom to time charters out Indian ships.
- Shipping companies are allowed to acquire vessels through bare boat charter-cum-demise method.
- The shipping companies permitted to get their ships repaired in any shipyard without seeking prior approval from the Government.
- Quarterly Block Allocation Scheme for repaid of ships has been dispensed with entirely and Reserve Bank of India now releases foreign exchange for ship repair/drydocking and spares for imported capital goods without any value limit.
- Certain sections of Merchant Shipping Act have been amended to facilitate indian shipping companies to raise external commercial borrowings for foreign ship acquisitions.
- As per the recent amendments to Section 42 of the Merchant Shipping Act, 1958 from October 1993 no prior permission from Directorate General of Shipping is required for sale of vessels either for further trading or scrapping by the Indian shipping companies.

Ports

100. There are eleven major ports and 139 operable minor ports located along the 5560 km long coastline of the country. During 1994-95, the total cargo handled at major ports was 197.3 million tonnes, registering a growth of 10 per cent over 1993-94, constituting about 92 per cent of total traffic handled by Port Sector. Dry and liquid bulk make up 80 per cent of the port traffic in volume with more valuable general cargo constituting 20 per cent of the tonnage. During April-November, 1995 major ports handled 137 million tonnes of cargo which was 11.1 per cent higher than the performance achieved in April-November, 1994. (Table 9.11).

Major increases in traffic were observed in respect of foodgrains (202 per cent), vegetable oil (146.8 per cent), fertilisers and raw materials (25.1 per cent) and containerised cargo (14.5 per cent). The composition of traffic has undergone significant changes in recent years and there is a need to restructure port capacities accordingly.

101. The total capacity of Indian major ports has been estimated at 174 million tonnes as on 31.3.1995. While water frontage is adequate there is an acute shortage of backup land. In recent years major investments in port construction have centred on container as well as bulk facilities. Modern equipment exists for container handling but the equipment-mix does not meet the present cargo handling needs of each port.

102. Port productivity has improved in recent years and there have been significant improvements in the average ship turnaround time and in output per ship berth day. In contrast to port productivity, labour and equipment productivity levels are still low due to surplus labour in ports, outdated equipment and operational constraints. Despite resistance from labour federations to proposals for rationalisation of the work force, Voluntary Retirement Scheme (VRS) has been successfully offered to shed excess manpower. Till November 30, 1995, around 9750 employees have availed of the VRS.

103. In order to attract private investments alongwith modern technology, the process of privatisation of port facilities has started with the announcement of the new economic policy. The port activities offered for private participation include building operation and maintenance of container terminals and cargo handling facilities; setting up of storage and warehouse facilities; pilotage service; dredging; operation and maintenance of port crafts and other equipments. The areas of ports which could be identified readily for privatisation in the coming years are supply, operation and maintenance of equipments and machines, container operations including supply and maintenance of container handling equipments, management of container freight stations, maintenance of civil engineering works like sheds, yards, warehouses, maintenance of navigational aids.

104. The actions have already been initiated by various ports for privatisation of port facilities within the ambit of existing statutory provisions. For example, two dry docks at Calcutta dock system have been privatised, and the proposal for leasing out two berths are under consideration of the Government; at Haldia dock complex two berths have been leased out to SAIL and TISCO and offers have been invited for 15 more berths on BOT basis. Proposals for privatisation at other ports are also under way.

105. The increased privatisation of ports, however, implies a gradual change in the role of port authorities and change of attitudes towards modernisation and mechanisation. Ports are governed presently by the Indian Ports Act, 1908, and The Major Port Trusts Act, 1963. These Acts have enough flexibility to allow privatisation of port activities. However, greater delegation of both administrative and financial powers to the ports have to be seriously considered, if private participation is to be encouraged and sustained.

TABLE 9.11
Trends in Traffic at Major Ports

				April-November*		Change over previous year	
		1993-94	1994-95*	1994	1995	1994-95	1995-96@
				(Million tonnes)		(per cent)	
1	POL	76.9	82.2	52.7	59.4	6.8	12.7
2	Iron Ore	34.1	34.8	19.5	21.4	2.1	9.9
3	Fertiliser & raw materials	7.4	8.5	5.1	6.4	14.2	25.1
4	Foodgrains	1.4	0.9	0.5	1.4	-61.1	202.1
5	Coal	26.4	29.9	19.2	20.4	13.1	6.0
6	Vegetable oil	0.4	0.6	0.5	1.2	72.2	146.8
7	Other liquids	3.5	4.9	3.2	3.6	39.3	11.5
8	Containerised cargo	12.3	15.4	9.6	11.0	26.0	14.5
9	Others	16.5	20.1	13.0	12.2	22.0	-6.1
	Total	**179.3**	**197.3**	**123.3**	**136.9**	**10.0**	**11.1**

* Provisional. @ April-November.

Environment Issues

106. The rapid increase in industrialisation and urbanisation has exerted pressures on the infrastructural facilities which are manifested in terms of increased incidence of air, water and noise pollution.

107. The ambient air quality of major towns and cities in the country are being monitored under the National Ambient Air Quality Monitoring (NAAQM) Programme. The monitoring results indicate the sulphur dioxide and Nitrogen dioxide levels are mostly within the permissible limits whereas Suspended Particulate Matter (SPM) values are higher than the prescribed limits at some places due to vehicular and air pollution, burning of fossil fuel and natural dusty conditions.

108. The data on Ambient water quality of rivers reveals that levels of coliform count and Biological Oxygen Demand (BOD) are generally high, resulting in deterioration of water quality. This is primarily due to inadequate sanitation facilities and discharge of waste water into the surface water bodies without proper treatment.

109. Urban noise levels in major cities also indicate an increasing trend due to rise in human population, automobiles and industrial activities. Specific studies reveal that noise levels in industrial areas are generally within the prescribed limits but exceed the standard in respect of commercial, residential and silence zones during certain hours.

110. Increasing population, alongwith widespread poverty, has generated pressure on natural resources and thus contributing to degradation of the environment. Of the 329 million hectares (m.ha) of total land area in the country, it is estimated that about 174 m.ha is degraded; this consists of agricultural as well as non agricultural lands, and forests. The forest resources are threatened due to overgrazing and other forms of over exploitation, both for commercial and household needs, encroachments, unsustainable practices like unscientific shifting cultivation and developmental activities. The recorded forest cover in the country is 75 m.ha which works out to 19.5 per cent of the total geographical area as against the broad national goal of 33 per cent for the plain area and 66 per cent for the hilly region. Withdrawals from the forests are much beyond the sustainable levels. It is estimated that the total fuelwood removal from forests exceeds 235 million cubic metres per year, as against a sustainable level of production of only 48 million cubic metres. In large parts of forests, natural regeneration is inadequate due to excessive grazing of livestock, whose population is estimated at around 450 million. However, despite such heavy removals and biotic pressures from forest, the biennial forest surveys of the Forest Survey of India have shown a reversal of declining trend in forest cover.

111. Over exploitation and loss of habitat constitute a threat to the rich biological diversity available in the country. India possesses the widest variety of biomass and over 75,000 species of fauna and 45,000 species of flora. Many of these are, however, endangered. Among the large animals, 79 species of mammals, as well as 44 of birds, 15 of reptiles and 3 of amphibians are threatened. Nearly 1500 plant species are considered endangered.

112. The fragile eco-systems of the country also face pressures. Coral reefs, which are very productive marine eco-systems, are adversely affected by their indiscriminate exploitation for production of lime, recreational use and ornamental trade. An area of 6700 Sq. Km. under mangroves is under biotic pressure due to fishing, land use changes in land-sea interface, and pollution of water. The country's unique wetlands, covering an area of 1.45 million hectares, are facing problems of weed infestation, siltation pressures of agriculture and encroachment, chemical and organic pollution, conversion to industrial sites, urbanisation and habitation. Out of the 85 wetlands of international importance in the country, 45 per cent are subject to moderate or high threats. Similarly, the fragile environs of island eco-systems have been subjected to pressures of various forms, including migration of people from the mainland.

113. To contain the degradation of the environment, the ongoing initiatives of the Government include preventive as well as promotive measures such as conservation of natural resources, prevention and control of pollution, prior environmental impact assessment of industrial and other projects, regeneration of degraded forests with peoples' participation and environmental awareness campaigns.

114. To encourage the installation of appropriate pollution abatement equipments, the Government has provided fiscal and monetary incentives and punitive measures are also initiated against the defaulting units. To achieve the goal of pollution abatement, emission and efficient standards for air, water and noise have been formulated and notified. More stringent norms for vehicular emissions have been notified under the Central Motor Vehicle Rules which would come into effect from April 1996. A major initiative has been taken to supply unleaded petrol in four metropolitan cities with effect from April 1995 for use in four wheel vehicles fitted with catalytic convertors. Seventeen highly polluting industries have been identified for special monitoring and enforcement efforts, and a substantial majority of the identified units have duly installed the requisite pollution control equipment. According to the data

collected by Central Pollution Board till 1995, out of 1551 units belonging to the 17 specified categories of industries, 1186 units had facilities to comply with the environmental standards, 121 were closed and 244 were not having the adequate facilities. Area specific management plans have been prepared to improve the quality of environment in designated 24 critically polluted areas in different parts of the country. The objective of ushering in clean technologies for waste minimisation and environmentally safe production is being attended to, under the ongoing World Bank assisted Industrial Pollution Control Project. An "Eco-mark" scheme is in operation to certify products of industries which fulfil prescribed pollution control standards and achieve high environment friendliness in production, packaging and waste disposal.

115. The forest conservation strategy has evolved, from dependence on strict regulation of access to and exploitation of forest areas, to incorporating a range of instruments and approaches tailored to specific local situations. The National Forest Policy explicitly recognises the multiple use of forests, the rights of local populations and the role that forests play in the survival strategies of the poor. The task of regenerating the degraded forest areas and lands adjoining forest areas and other protected and ecologically fragile areas and implementation of eco-development programmes is being undertaken by the National Afforestation and Eco-Development Board. During 1994-95 an area of 9,84,102 ha of public land was brought under vegetative cover in the country and 10,810 lakh seedlings were distributed for planting on private land under the 20-Point Programme. The 1995-96 targets for the same are 11,23,784 ha and 11,355 lakh respectively.

116. Major schemes in the Wildlife sector concentrate on conservation, protection and development of wildlife and its habitat. The main strategy for conservation of bio-diversity is protection of viable habitats in representative eco-systems. A wide network of 75 National Parks, 421 Wildlife Sanctuaries, 21 Project Tiger areas and 8 Biosphere reserves have contributed greatly towards conservation of these species. Ex-Situ conservation is another thrust area in the Government's conservation efforts.

117. An important thrust towards abatement of river pollution has been the Ganga Action Plan (GAP) to clean up the river Ganga. The phase I of GAP tackled 25 class I towns along the river in the three basin states of Uttar Pradesh, Bihar and West Bengal while the phase II covers tributaries viz Yamuna and Gomati and the residual pollution load from class I and class II towns. Following the success of Ganga Action Plan, a wider scheme called National River Action Plan covering pollution abatement works for grossly polluted stretches in 18 major rivers in ten States has been approved and the work begun. The thrust of the programme has been popularising the low cost technologies which are easy to operate and maintain and to seek peoples participation in keeping the river clean. A programme for conservation of selected lakes is also under formulation.

118. The National Environmental Tribunal Act providing relief, compensation and restitution to victims of accidents, while handling hazardous substances and for environmental damages came into force from June, 1995. The Act provides (i) strict liability for damages arising out of any accident while handling any hazardous substance and (ii) the establishment of a National Environmental Tribunal for effective and expeditious disposal of cases arising from such accidents with a view to give relief and compensation for damages to persons, property and the environment and (iii) matters connected therewith or incidental thereto.

119. With a view to mitigate the adverse environmental effects of development projects and to integrate environmental concern into development, prior environmental clearance of development projects based on impact assessment is being increasingly emphasised. Such clearance has been made mandatory for 29 specified categories of development projects through a notification issued in January, 1994. This mechanism will also help in catalysing the process of inducting cleaner environmentally friendly technologies into the development process. Other initiatives taken to motivate environmentally oriented technologies and practices include submission by industries of an environmental statement every year and setting up of a Clean Technology Division in the Ministry to identify cleaner technologies that can be introduced in different sectors.

120. To enhance general awareness of environmental issues a National Environmental Awareness Campaign is conducted every year on a selected theme. The Ministry has also constituted in November, 1995, a Social Audit Panel to assess general public awareness and appreciation of its programmes and to take corrective action, wherever needed, to model them to suit people's requirements and to mobilise there support and participation.

Outlook

121. The provision of adequate infrastructure facilities of high quality at reasonable cost is crucial for the rapid growth of different sectors of the economy. Government has therefore embarked on a conscious strategy to upgrade its infrastructural services such as power, telecommunications, surface transport including road and bridges, transportation

infrastructures including ports and airports. The macroeconomic reform measures of recent years have triggered immense opportunities in infrastructure sectors for remunerative investments and enhanced the role of private sector. It is widely recognised that the private sector has to contribute substantially towards the financing of the large infrastructural investment in the next decades. The deregulation and privatisation of infrastructure services however need to be supplemented by the establishment of statutory regulatory frameworks for ensuring fair competition among different operators and protecting consumer interests, needs of vulnerable and weaker sections, public safety, internal and external security and environmental protection.

122. The policies of the Government in infrastructure sectors have reflected the demonstrable track record in the opening up of the Indian economy to international technologies across an array of sectors including telecommunications, power, petroleum, civil aviation, ports and airports. Even in sectors still reserved for the public sector, such as railways and coal, the Government is allowing private participation, including foreign investment. The pace and scope for competitive supply of infrastructure services, however, varies greatly across sectors, within sectors and between technologies.

123. Till recently the task of infrastructure development was entrusted to the public sector which has however not succeeded in generating the quantity and quality of services demanded. Therefore the Government has decided to induct the private sector in the development of infrastructure for supplementing the efforts of the public sector. Infrastructure development on commercial principles and without recourse to budgetary support is highly dependent on the ability to evolve cogent public-private partnerships. The variety of options available for building public-private partnership and the complexity of mechanisms that can be applied to achieve policy ends necessitate clarity in policy and well thought out implementation strategies. The Government has already issued policy guidelines to ensure that the policy framework is developed to satisfy the sector specific needs in a form and manner that is transparent, cogent and addresses the various duties and obligations of the stakeholders.

124. The public sector enterprises (PSEs) will however continue to shoulder the major responsibility of providing critical infrastructural services in the economy in the foreseeable future. PSEs need to take necessary steps to improve their performance in the present competitive environment. Many public enterprises are burdened with operating inefficiencies and lack of maintenance, resulting in under utilisation of capacities and decline in output. Many PSEs also face the problem of low recovery of user costs and, therefore, poor financial performance. These problems have to be tackled in a concerted and effective manner. A remunerative price to ensure cost recovery, and to generate adequate investible resources for expansion and modernisation, should now be the basic policy for infrastructure development. In addition, PSEs need to formulate their long-term corporate plans to include strategic alliances with private domestic or foreign partners. This will improve their financial position and also provide them access to latest technology.