E. C. No. 814

ESTIMATES COMMITTEE (1974-75)

(FIFTH LOK SABHA)

SEVENTY-SEVENTH REPORT

MINISTRY OF RAILWAYS

Railway Electrification Projects

LOK SABHA SECRETARIAT
NEW DELHI

April, 1975/Chaitra, 1897 (Saka)

Price : Rs. 1·70

LIST OF AUTHORISED AGENTS FOR THE SALE OF LOK SABHA SECRETARIAT PUBLICATIONS

Sl. No.	Name of Agent
	ANDHRA PRADESH
1.	Andhra University General Cooperative Stores Ltd., Waltair (Visakhapatnam).
2.	G. R. Lakshmipaty Chetty and Sons, General Merchants and News Agents, Newpet, Chandragiri, Chittoor District.
	ASSAM
3.	Western Book Depot, Pan Bazar, Gauhati.
	BIHAR
4.	Amar Kitab Ghar, Post Box 78, Diagonal Road, Jamshedpur.
5.	M/s. Crown Book Depot, Upper Bazar, Ranchi.
	GUJARAT
6.	Vijay Stores, Station Road, Anand.
7.	The New Order Book Company, Ellis Bridge, Ahmedabad-6.
	HARYANA
8.	M/s. Prabhu Book Service Nai Subzi Mandi, Gurgaon.
	MADHYA PRADESH
9.	Modern Book House, Shiv Vilas Palace, Indore City.
	MAHARASHTRA
10.	M/s. Sunderdas Gianchand, 601, Girgaum Road, New Princess Street, Bombay-2.
11.	The International Book House, (Private) Limited, 6, Ash Lane, Mahatma Gandhi Road, Bombay-1
12.	The International Book Service, Deccan Gymkhana, Poona-4.
13.	Charles Lambert & Company, 10, Mahatma Gandhi Road, Opposite Clock Tower, Fort, Bombay.
14.	The Current Book House, Maruti Lane, Raghunath Dadaji Street, Bombay-1.
15.	Deccan Book Stall, Fergusson College Road, Poona-4.
16.	M.& J. Services, Publishers Representatives, Accounts & Law Book Sellers, Bahri Road, Bombay-15.
	MYSORE
17.	People Book House, Opp. Jaganmohan Palace, Mysore.
	RAJASTHAN
18.	Information Centre, Government of Rajasthan, Tripolia, Jaipur City.
19.	M/s. Usha Book Depot, 585/A, Chitra Bazar, Tripolia, Jaipur.
	UTTAR PRADESH
20	Law Book Company, Sardar Patel Marg, Allahabad-1.

CONTENTS

	PAGE
COMPOSITION OF THE COMMITTEE	(iii)
COMPOSITION OF THE ACTION TAKEN SUB-COMMITTEE	(v)
INTRODUCTION	(vii)
REPORT—	
A. Selection of Traction	1
B. Perspective Plan	8
C. Fifth Plan Projects	10
D. Sixth and Seventh Plan Projects	13
E. Progress of Individual Projects	14
F. Decentralisation of Railway Electrification Organisation	25
APPENDIX I— Particulars of Orders placed for Telecommunication Cables required for Railway Electrification Projects.	32
APPENDIX II —Particulars of Orders placed for Telecommunication Accessories required for Railway Electrification Projects.	34
APPENDIX III —Summary of Recommendations/Conclusion	36
APPENDIX IV —Analysis of Recommendations.	43

ESTIMATES COMMITTEE.
(1974-75)

CHAIRMAN

Shri R. K. Sinha

MEMBERS

2. Shri R. Balakrishna Pillai
3. Shri R. N. Barman
4. Shri Rajagopalarao Boddepalli.
5. Swami Brahmanand
6. Shri Madhu Dandavate
7. Shri Bhaoosahaib Dhamankar
8. Shri Anant Prasad Dhusia
9. Shri Tarun Gogoi
10. Shri Giridhar Gomango
11. Shri E. R. Krishnan
12. Haji Lutfal Haque
13. Shri Nageshwararao Meduri
14. Shri Jagannath Mishra
15. Shri Bijoy Modak
16. Shri Krishna Chandra Pandey
17. Shri Anantrao Patil
18. Shri Dhan Shah Pradhan
19. Ch. Ram Prakash
20. Shri Bhola Raut.
21. Shri P. Ganga Reddy
22. Ch. Sadhu Ram
23. Shri Ebrahim Sulaiman Sait
24. Shri Shiv Kumar Shastri

25. Shri P. Ranganath Shenoy

26. Shri Awdhesh Chandra Singh

27. Smt. Bhargavi Thankappan.

28. Shri M. G. Uikey

29. Shri K. P. Unnikrishnan

30. Shri Phol Chand Verma.

SECRETARIAT

Shri G. D. Sharma, *Chief Financial Committee Officer.*

Shri J. P. Goel, *Senior Financial Committee Officer.*

ACTION TAKEN SUB-COMMITTEE OF ESTIMATES COMMITTEE (1974-75)

CHAIRMAN

Shri R. K. Sinha

MEMBERS

2. Shri Bhaoosahaib Dhamankar—*Convener.*
3. Shri Madhu Dandavate
4. Shri Bijoy Modak
5. Shri Anantrao Patil.
6. Shri P. Ranganath Shenoy
7. Shri M. G. Uikey

INTRODUCTION

I, the Chairman, Estimates Committee having been authorised by the Committee to submit the Report on their behalf, present this Seventy-Seventh Report on the Ministry of Railways—Railway Electrification Projects.

2. The Committee took evidence of the representatives of the Ministry of Railways on the 19th August, 1974. The Committee wish to express their thanks to the Chairman, Railway Board and other officers of the Ministry of Railways for placing before them material and information which they desired in connection with the examination of the subject and for giving evidence before the Committee.

3. The Report was considered and adopted by the Committee on the 18th April, 1975.

4. A summary of the recommendations/conclusions contained in Report is appended (Appendix-III).

5. A statement showing the analysis of recommendations/conclusions contained in the Report is also appended to the Report (Appendix-IV).

R. K. SINHA,

NEW DELHI;
April 26, 1975

Chairman,
Estimaties Committee.

Vaisakha 6, 1897 (*Saka*).

REPORT

Introductory

1. The Estimates Committee, 1968-69, examined the various aspects relating to Railway Electrification Projects and presented their 70th Report (Fourth Lok Sabha) on the Ministry of Railways—Railway Electrification Projects to Lok Sabha on the 18th February, 1969. This Report contained 25 recommendations in all.

2. Government's replies to these recommendations indicating the action taken to implement them were included in the 102nd Report of the Estimates Committee 1969-70 (Fourth Lok Sabha). It was brought out in this Report that out of 25 recommendations contained in the 70th Report, 21 recommendations were accepted by Government for implementation, the Committee did not desire to pursue 3 recommendations in view of Government's reply, and the Government's reply in respect of one recommendation was not accepted by the Committee.

3. The Action Taken Sub-Committee of the Estimates Committee (1973-74) had decided at their sitting held on the 26th July, 1973, to pursue with Government, *inter alia,* the implementation of the recommendation contained in the 70th and 102nd Reports of Estimates Committee (Fourth Lok Sabha). As desired by the Sub-Committee, further information on Action Taken by Government to implement these recommendations was called for from the Ministry of Railways.

4. The Action Taken Sub-Committee of the Estimates Committee (1974-75) decided to continue further examination of the subject.

5. The Estimates Committee took evidence of the representatives of the Ministry of Railways on the 19th August, 1974.

6. The main points taken up by the Committee and the recommendations of the Committee in this regard are dealt with in the subsequent paragraphs.

A. Selection of Traction

7. In para 2.18 of their 70th Report (Fourth Lok Sabha) the Committee had noted that before any particular sector of the Railways was taken up for electrification, the comparative economics of steam, diesel and electric tractions were gone into and only after it was found that electric traction would be more economical, it was adopted.

8. The Committee wanted to know if the question of relative economics and operational efficiency of electric traction *vis-a-vis* diesel and steam traction had been reviewed in the light of steep rise in the oil prices and its scarcity.

9. It has been stated by the Ministry of Railways in this connection that steam traction is technologically inferior to diesel or electric locomotion in almost every respect. As converters of heat energy, diesel and electric locomotives are three to four times more efficient than the steam engine. Because of better starting effort, sharper acceleration and deceleration, higher speed, grater hauling capacity and smaller number of idle loco hours per day, dieselisation and electrification lead to a considerable saving of line capacity. Between the two modes of traction, the electric locomotive can haul a larger trailing load than the diesel locomotive on steep gradients.

10. The best technology may not, in all circumstances, be the cheapest one. Though technologically inferior, steam traction is the least capital intensive and becomes less economical than dieselisation only when the traffic density is high or when loco coal has to be carried over long distances. Electrification is the most capital intensive mode of traction because of the heavy capital outlay required for the installation of overhead equipment (OHE). It becomes economical, therefore, at comparatively higher traffic densities; for, unless the overhead equipment capacity is intensively utilised so that investment on it is spread over a larger traffic throughout, unit transportation costs are likely to be high. Other things being equal, the traffic density which makes electrification economic will, thus, be higher, the higher the investment cost of overhead equipment and the higher the rate of interest on capital. Unit transportation costs with dieselisation, on the other hand, are sensitive to the cost of high speed diesel oil, which in turn depends on (i) the scarcity value of foreign exchange and (ii) the ruling international price of crude oil. As such, higher the price of petroleum and more acute the shortage of foreign exchange, the lower, other things remaining the same, the economic density threshold for electrification.

11. In order to assess the impact of the likely future crude oil prices on the comparative merits of steam, electric and diesel traction, unit transportation costs were computed on the basis of average norms, varying traffic density levels, proportionate adjustment of the (net of excise) high speed diesel oil prices to crude oil prices of $8 and $10 per cent per

annum. The main preliminary conclusions that emerged from this quick review are as follows :

(a) There is no scope yet for resuming the manufacture of Broad Gauge main line steam locomotives; but, it would be worthwhile to rehabilitate overaged steam locomotives.

(b) Electrification becomes more economic than extension of dieselisation at traffic densities exceeding 8.4 and 7.2 million net tonne kilometres per route kilometre of double line sections according as the price of crude oil is $8 and $10 per barrel.

(c) The operation of the existing diesel loco fleet would be economical over a wide density range for the reason that the capital outlay on its acquisition having already been incurred has to be treated as a 'sunk' cost.

(d) The rate at which diesel locomotives will need to be produced in the future would depend on the maximum pace at which electrification can be undertaken during the next three Plan periods.

12. These findings, it has been stated, are neither absolute nor static; they are valid only for the input prices and norms which have been assumed. Thus, the breakeven density for electrification may be very much lower on steeply-graded sections requiring banking on double/multiple heading with diesel traction. Again the breakeven density will fall if the rate of interest is lower than 10 per cent or if the price of crude oil rises beyond $10 per barrel.

13. It has been further stated that the review regarding future traction confirms that there is scope for stepping up the rate of electrification. Keeping in view the preparatory time for building up physical capacity to undertake electrification to an increased extent and also to allow time for stepping manufacture of required materials and locomotives, the following targets have been outlined for successive Plan periods—

5th Plan	about 1,800 km.
6th Plan	about 3,000 kms.
7th Plan	about 4,000 kms.

14. The Committee wanted to know if any criteria/guidelines have been evolved to decide on the pattern of traction and production of locomotives etc. to achieve maximum benefit, financial and operational, keeping in view the availability of financial resources, foreign exchange etc. In reply the Ministry of Railways have stated that the review reveals that there is no scope yet for resuming manufacture of steam locomotives. The criteria for identifying sections for operation by one or the other type of traction is broadly in terms of traffic density but in order to determine the mode of traction that offers maximum benefit—financial and operational—specific surveys are carried out for the sections which *prima facie* on the basis of traffic density, appear to warrant change of traction from diesel to electric. The production of locomotive is related to the requirements arrived at by an analysis of the extent of operation by different modes.

15. During evidence before the Committee, the representative of the Ministry of Railways analysed the situation resulting from the international energy crisis and the prevailing situation of the Indian power system in the following words :—

> "Railway electrification consumes 2-3 per cent of the total power generated in the country. That position will remain for the future also. It may go even less if we are able to accelerate the generation of power in the country.
>
> The result of the analysis has shown that we have to strike a balance between the foreign exchange resources required for the import of diesel oil and the capital resources that are required to be put in for electrification. The overhead structures and other requirements are very expensive for this. Very high densities of traffic are required to justify this. As it is, the oil prices, were very much higher for Indian Railways than anywhere else in the world because of the taxation. With this price hike, the situation has changed slightly, but it has not made that much difference to us as it has in some other cases, where the taxation on oil was very much low."

16. The representative stated that while drawing out this perspective, the energy crisis, the increased cost of works and the rise in price of diesel oil had been taken into account.

17. A more elaborate analysis of the situation was given by the Minister of Railways in his budget speech in February, 1974 as follows :—

> "The Hon'ble Members are aware of the frequent interruptions to power supply, load shedding etc. which we have had to be

content with, particularly during the last 18 months or so. These interruptions have adversely affected train operations as well as the production, overhaul and maintenance of our locomotives, wagons and coaches. In order to ensure uninterrupted supply of power, stand-by generating sets are being obtained for installation at certain repair Workshops and Production Units.

In the context of the prevailing oil crisis, the pace of electrification of trunk routes is being accelerated to energise 1,800 route kilometres by the end of the Fifth Plan period. To guard against interruption in power supply, we are considering setting up our own generation stations linked with the grid systems of the States. I had approached the House in December last and obtained their approval through a Supplementary Grant for taking up the surveys and site studies on the Central and Eastern Railways. I am glad to inform the House that these studies are making good progress. As and when these projects take feasible shape, steps will be taken, in consultation with the Planning Commission, to instal captive thermal power houses in the Fifth Plan. As electric power shortage is not likely to be entirely overcome in the near future, Railways will probably have to set up their own power houses in the Sixth Plan period also.

Changes in the mode of traction from steam to diesel and electric have been made during the last two decades to modernise rail-transport technology as well as to meet the increasing traffic demand. A decision was also taken in 1971 to discontinue the manufacture of steam locomotives at Chittaranjan. The Railway's annual consumption of High Speed Diesel Oil is about 0.58 million tonnes as against the total consumption of about 6 million tonnes in the country *i.e.*, only about 10 per cent. Diesel Oil consumption by the Railways is estimated to rise to 0.8 million tonnes at the end of the Fifth Plan on the basis of the present programme of dieselisation. The main consumer of High Speed Diesel oil is, however, road transport, which uses nearly 80 per cent of the total annual consumption. In comparison with road transport, Railways are a more efficient user of diesel oil as their performance per unit of diesel oil consumed is six times better in terms of tonne kilometres than that of road transport.

We are today faced with the problem of a steep increase in the price of diesel oil as well as possibly reduced availability. Oil crisis will also generate increased demand for rail

transport if High Speed Diesel oil supplies to road transport are restricted. In this context, our Plans for electrification of trunk routes will be stepped up to about 1,800 kms. during the Fifth Plan, rising to 3,000 route kms. in the Sixth Plan and reaching 4,000 route kms. during the Seventh Plan. Preliminary studies have indicated that in an overall assessment it would not be economically prudent to revert to steam traction as it would require much higher investments on line capacity works and maintenance facilities etc. to compensate for the lower hauling of steam locomotives in comparison with diesel or electric locomotives. The Ministry of Railways have, therefore, urged that for these reasons and in view of their important role in providing transport infra-structure, their demand for High Speed Diesel oil should not be reduced. Pending further developments at the national level, production of diesel locomotives and on line plans for dieselisation have not been altered.

While the crisis affects many sectors of the economy, its impact on Railways is two-fold. First it has resulted in increased demand for coal, which is expected to reach a production level of 90 to 95 million tonnes in 1974-75 against about 79 million tonnes during the current year. Transport capacity to match this substantial increase in the originating traffic of coal will require detailed planning of linkages and necessitate the optimum utilisation of existing assets as well as setting up of additional facilities. In coordination with the Department of Mines, we are taking requisite steps to meet the challenge. Secondly, it has re-activated interest in steam traction as a possible alternative to dieselisation. A quick economic study has thrown up the conclusion that while it is not advisable to re-start the production of steam locomotives, the service life of the existing steam fleet could be prolonged by improved maintenance and rehabilitation. Accordingly, it has been decided not to condemn and abandon old steam locomotives for the present."

Power Stations

18. The Committee have been informed that the Ministry of Railways proposed to set up 3 new power stations in the Fifth Plan—one in West Bengal, one in Bihar and one in U.P., each with 2x110 MW sets.

19. It is also proposed to replace and augment the generating capacity at Central Railway's existing Thermal Power Station at Thakurli near

Kalyan by 2x110 MW sets. This proposal is included in Ministry of Irrigation and Power's (Now Ministry of Energy) Fifth Five Year Plan proposals.

20. The site studies and preparation of Feasibility Reports have been completed for the Thermal Power Stations proposed to be set up in West Bengal, Bihar and for the expansion of Central Railway's existing Thermal Power Station at Thakurli (near Kalyan).

21. The site studies for setting up Power Station in U.P. have been completed and the Feasibility Report is expected to be completed by the end of October, 1974.

22. The Feasibility Report for setting up a Power Station in West Bengal has been submitted to the Planning Commission for approval of the Scheme and allotment of funds. The reports pertaining to Bihar and expansion of Central Railway's Power House at Thakurli (near Kalyan) are expected to be submitted to the Planning Commission shortly.

23. It has been stated that the detailed programmes for execution of the above schemes will be drawn up only after the Ministry of Railways' above-mentioned proposals are approved by the Planning Commission and necessary funds are allotted for taking up the work in the Fifth Plan.

24. It has also been stated that the setting up of Railways' Thermal Power Stations and running them interconnected with the State/Regional grids would be adequate to ensure that electrification programmes are not affected for non-availability of power.

25. The Committee note that steam traction is technologically inferior to diesel and electric locomotion in about every respect. Between the two modes of traction, the electric locomotive can haul a larger trailing load than the diesel locomotive on steep gradients. The Committee also note that a review of the relative economics and operational efficiency of electric traction vis-a-vis **diesel and steam tractions in the light of steep rise in the oil prices and its scarcity, confirms that there is scope for stepping up the electrification on the Railways. The Committee observe that these considerations have been kept in view while outlinging the future electrification programmes during the three successive Plans. The Railways' Plans for electrification of trunk routes are expected to be stepped up to about 1800 kms. during the Fifth Plan, rising to 3000 route kms. in the Sixth Plan and reaching 4000 route kms. during the Seventh Plan.**

26. The Committee further note that, to guard against the interrupted power supply resulting from the shortage of power supply, the Ministry of Railways propose to set up their own generating stations, one each in West

Bengal, Bihar and U.P. during the Fifth Plan. It is also proposed to replace and augment the generating capacity at Central Railway's existing Thermal Power station at Thakurli near Kalyan by 2 x 110 M.W. sets. This proposal is also included in the Fifth Plan proposals of the Ministry of Irrigation and Power (now Ministry of Energy).

27. The Committee hope that timely decisions will be taken in regard to final approval of these proposals and allotment of funds etc. so that the generating stations will be available to supplement the power supplies from other sources at an early date.

28. Since the power shortage is not likely to be overcome in the near future, Railways may have to set up their own power houses in the Sixth Plan also. The Committee recommend that this matter may be examined in depth and necessary programmes for setting up additional power stations by the Railways drawn up well in advance.

B. Perspective Plan

29. In para 2.37 of their 70th Report (Fourth Lok Sabha) the Committee had expressed their unhappiness that the Ministry of Railways had not prepared any Perspective Plan in regard to electrification of lines beyond the Fourth Plan schemes. They had recommended the preparation of a Master Plan for the electrification of the Indian Railways on a long term basis so that a clear picture might emerge as to the quantum of work that has to be executed, for the benefit of the planners, basic industrial units of the public and private sectors as well as the related manufacturing industries in the country.

30. In their reply submitted to the Committee in August, 1969, Government stated that action to prepare a Perspective plan for electrification of the Indian railways had already been initiated.

31. Stating the position in this regard the Chairman, Railway Board informed the Committee during evidence in August, 1974 as follows:

> "The Perspective Plan has taken shape and is based on a 15-year horizon, starting with the Fifth Five Year Plan and covering the 5th, 6th and 7th Plans. This is the initial version of the Plan and the final version which will contain all the details would take about 2 or 3 years more for preparation. It is proposed to electrify 8,000 route kms. during the three Plan periods. We have introduced a Plan and identified about 10,500 route kms. which qualify for electrification. We are now going into the details of the resource requirements for these 10,500 kms."

32. Elucidating his point further, the representative of the Ministry of Railways stated that detailed studies were being made in regard to the requirements of traffic, power, energy etc. and the matching development necessary in the field of power for ensuring that it would be available during the course of the three Plans, because the Plans had got to be integrated with the growth of power in different areas covered by these projects.

33. It has been stated in a note furnished to the Committee that an assessment of traffic growth and likely increase in traffic densities indicates that upto 16,000 route kms. of Broad Gauge on Indian Railways may warrant electrification by the end of the Seventh Plan. This estimate would, however, need to be reviewed in the context of changing prices for materials, diesel oil and cost of electricity etc.

34. Total route kms. electrified upto the end of Fourth Plan amounted to about 4,157.

35. The present plan-wise targets for electrification which, are, however, dependent on anticipated growth in traffic and provisioning of adequate funds are:—

V	Plan	1,800 additional route kms. to be electrified.
VI	Plan	3,000 additional route kms. to be electrified.
VII	Plan	4,000 additional route kms. to be electrified.

36. The Committee have been informed that the electrification of 8,800 route kilometres proposed to be completed in the three Plan periods will cost about Rs. 950.00 crores. This does not include the cost of rolling stock.

37. The Committee note that action to prepare a perspective Plan for electrification of the Indian Railways forming a part of the corporate plan of the Indian Railways has been initiated in implementation of the recommendation contained in para 2.37 of their original Report (70th Report-Fourth Lok Sabha). The Committee also note that out of 16,000 route kms. that would warrant electrification by the end of the Seventh Plan, Government propose to electrify 8,800 route kms. upto that period at a cost of Rs. 950 crores excluding the cost of rolling stock. The Committee are, however, unhappy to note that this is only an initial version of the plan which was initiated in 1969 and it will take yet another two or three years to bring out a final detailed version. It is surprising that it should take nearly two Plan periods for the Railways to prepare even a 15 year plan for electrification of Indian Railways. It is noteworthy that by the time the

Plan is ready, the first 5 years of the corporate plan will have elapsed. The Committee are led to the conclusion that Government have not given serious consideration to the implementation of the recommendation of the Committee that it deserved. In view of the importance that Railway electrification has acquired in the context of international energy crisis and the rising oil prices in the world, the Committee strongly recommend that urgent measures should be taken to complete the detailed perspective plan so that the same could be executed in a phased manner during the next 15 years and all slippages and delays resulting from want of working details obviated.

C. Fifth Plan Projects

38. It has been stated in a note furnished to the Committee in March, 1974 that electrification work would be in progress on sections totalling 1474 route kms. at the beginning of the Fifth Five Year Plan. In addition to completing all these sections, new works are likely to be started on another 3000—3500 route kms. during the Plan. On some of the proposed sections, cost-*cum*-feasibility surveys are stated to be already in progress. It is proposed to energise about 1800 route kms. in the Fifth Five Year Plan.

39. The sections on which works are in progress are given below:—

(i) Virar-Bhistan	200 route km.
(ii) Panskura-Haldia	69 route kms.
(iii) Tundla-Delhi	259 " "
(iv) Waltair-Kirandul	471 " "
(v) Madras-Vijayawads	433 " "
(vi) Madras-Trivellore	42 " "
	1474 route kms.

40. Besides the above, electrification is proposed to be undertaken on the following sections, subject to the schemes being found finacially viable:—

	Rkms.	
(i) Bhusaval-Nagpur	393	Survey completed
(ii) Durg-Nagpur	265	Project Reports are under consideration
(iii) Delhi-Bina	567	Survey completed. Under Scrutiny.
(iv) Madras-Arkonam / Guntakal-Hospet	52[illegible]	Surveys in progress

(v) Sitarampur-Garhara	275 Rkms.	
(vi) Bhilai-Delhi-Rajhara	85 ,,	
(vii) Vadodara-Ratlam & Godhra-Anand . .	338	Survey Estimate under examination.
(viii) Arkonam-Erode & Jalarpettai-Bangalore .	364	Proposal under consideration.
(ix) Rampur Dumra-Mughal sarai . . .	314	
	3121 Rkms.	

41. The Committee have, however, been informed subsequently that though Bhusaval Nagpur and Durg Nagpur schemes have been found finacially viable, it has not been possible to sanction these schemes so far, nor does it appear likely to sanction them during 1975-76 due to financial stringency.

42. It has been further stated that due to uncertain financial resource position, it has not been possible to fix now the targets for undertaking electrification on the sections mentioned above.

43. Projects which are under execution now have laid down quarterly targets for every important activity. Actual performance is proposed to be compared with the targets, constraints are proposed to be identified and steps are proposed to be taken at appropriate level to overcome them.

44. Asked to state the target for electrification of the railway lines during the year 1974-75 and funds allocated for the purpose, Government have stated in reply to an Unstarred Question No. 4767 dated the 25th March, 1975 in Lok Sabha that 200 kilometres of Bhistan-Virar section of Virar Sabarmati Railway Electrification Project and 69 route kms. of Panskura-Haldia Railway Electrification Project were targeted for completion during 1974-75. Rs. 4.00 crores and Rs. 0.70 crores have been allotted for these two projects respectively during 1974-75*. While the Virar-Bhistan Section is stated to have been energised by stages in December, 1974, the Panskura-Haldia section is likely to be completed by June, 1975. Total allocation for Electrification during the Fifth Plan is Rs. 120 crores.

45. When pointed out that out of 1800 kms. proposed for energisation during the Fifth Plan, electrification of 1474 kms. was being carried over from the Fourth Plan whereby only 326 kms. would be additional energisation during the Fifth Plan, the representative of the Ministry of Railways explained during evidence that while it was true that in the

*The Ministry have stated at the time of factual verification that :—

"There were other projects also which were also targeted for completion during 1974-75 and the total financial allocations for all the projects for the first year of the Fifth Plan work out to Rs. 23 crores."

Fifth Plan, only 1800 kms. was proposed to be electrified, but that was what would be energised. There would be other works which would be in the course of implementation and which would get energised in the Sixth Plan.

46. Asked if advance action in regard to the projects included in the Fifth Plan had been completed, it has been stated by the Ministry of Railways in a written note furnished to the Committee that it is anticipated that the following schemes which are under execution and proposed to be energised during the Fifth Five Year Plan are not likely to be held up on account of track works, yard remodelling, power supply etc.

(i) Virar-Bhestan section of Virar-Ahmedabad Scheme (since completed).

(ii) Tundla-Delhi.

(iii) Waltair-Kirandul.

(iv) Madras-Gudur.

(v) Vijayawada-Gudur.

47. As regards Nagpur-Bhusaval and Durg-Nagpur sections which have not been sanctioned because of difficult financial position, care will be taken to ensure that progress is not impeded on account of track works etc. once the schemes are sanctioned.

48. The Committee note that it is proposed to energize 1800 route kms. during the Fifth Five Year Plan, out of which electrification on projects totalling 1474 kms. was already in progress at the beginning of Fifth Five Year Plan. In addition to the completion of all these sections, new works are likely to be started on another 3000—3500 route kms. during the Plan.

49. The Committee, however, find that though some of the schemes like Bhusaval-Nagpur and Durg-Nagpur have been found financially viable, it has not been possible to sanction these schemes so far, nor does it appear likely that these schemes will be sanctioned during 1975-76 due to financial stringency.

50. The Committee further note that due to uncertain financial resources, it has not been possible to fix the targets in respect of the following sections comprising 3121 Route kilometres viz. Bhusaval-Nagpur, Durg-Nagpur, Delhi-Bina, Madras-Arkouam-Guntakal Hospet, Sitarampur-Garhara, Bhilai-Delhi-Rajahara, Vadodra-Ratlam and Godhra Anand, Arkonam-Erode, Jalarpettai-Bangalore and Rampur-Dumra-Mughalsarai.

51. Further, as would be seen under the section dealing with the progress of individual electrification projects during the Fourth Plan the targets in case of a number of schemes are getting delayed.

52. Having noted the progress in electrification of projects so far, the Committee are doubtful if the targets for electrification at the proposed rate will be achieved during the Plan period. In the opinion of the Committee unless effective remedial measures are taken urgently, the slippages are bound to be appreciably large.

53. The Committee would, therefore, urge Government to take early decisions on allocations in the light of the perspective plan and keeping in view the need for accelerated electrification in the context of the world oil crisis. The Committee further recommend that targets in respect of all the sections should be fixed immediately and effective steps taken to ensure that the same are adhered to strictly.

D. Sixth and Seventh Plan Projects

54. The Committee wanted to know the advance action taken in implementation of electrification plans during the Sixth and Seventh Plans like investigations, surveys, planning of layouts, track work, remodelling of yards, planning for power generation including captive plants etc.

55. It has been stated in this connection that before an electrification Project is sanctioned, a cost-*cum*-feasibility survey of the section is carried out. It takes about 4 to 5 years for completion of the Project after it is sanctioned. Therefore, surveys of the sections likely to be energised during the Sixth and Seventh Plans will have to be completed and Projects sanctioned during the Fifth and Sixth Plans respectively. Therefore, while it is premature to carry out survey of the sections of the Seventh Plan, surveys of the following sections totalling upto 2105 route kms. which might be energised during Sixth Plan, are in progress and are in various stages of completion—

(i) Bhusaval-Nagpur	393	Surveys completed.
(ii) Durg-Nagpur	265	Projects not yet sanctioned due to financial stringency.
(iii) Delhi-Bina	567	Survey completed. Reports under scrutiny.
(iv) Sitarmpur-Garhara	275	
(v) Madras-Guntakal-Hospet	520	Survey in progress.
(vi) Bhilai-Dalli-Rakhara	85	

56. Survey of Vadodara-Ratlam and Godhra-Anand section is likely to be taken up next. Surveys of some more sections are under consideration.

57. As regards track works and remodelling of yards, it has been stated that general instructions had been issued some time ago to the

effect that such major works on sections sanctioned for electrification should be completed in time. As and when new sections, get sanctioned for electrification, it would be ensured that these works do not hold up progress of electrification. It may not, however, be possible to take up major track and yard remodelling works on likely sections, only in anticipation of electrification, in preference to similar but more urgent works on other sections in view of limited financial resources.

58. It has been further stated that in respect of power geneation, the State Electricity Boards were advised some time ago of the possible requirement of power for electric traction and were requested to take these loads into account while formulating their plans. As some more sections have been included in the latest Plan, State Electricity Boards would be advised afresh about the changes.

59. The Committee note that advance action for electrification of projects totalling 2,105 route kms. which might be energised during the Sixth Plan is in progress and surveys are in various stages of completion. The Committee also note that surveys of the remaining sections are under consideration. Measures have also been taken to ensure that the electrification on sanctioned projects is not held up due to track works and remodelling of yards etc.

60. The Committee also note that the State Electricity Boards have already been advised of the possible requirement of power for electric traction and have been requested to take these loads into account while formulating their plans. As some more sections have been included in the latest Plan, the State Electricity Boards would be advised afresh about the changes.

61. The Committee attach great importance to this aspect of the matter and would like the Ministry of Railways to give this matter careful attention and to assiduously pursue with the State Electricity Boards concerned to ensure that the electrification of the various projects is not held up on this account.

E. **Progress of Individual Projects**

62. In paras 2.50, 2.51, 2.52, 2.53 and 2.54 of their 70th Report (Fourth Lok Sabha) the Committee had noted that except in one case, all the railway electrification projects from the Second Five Year Plan onwards had to be carried forward beyond the target dates originally fixed for their completion. The Committee had observed that even though the Railways could not foresee such factors as strikes in their construction units, public demonstration and stoppage of passenger trains etc. they were directly responsible for such jobs as remodelling of yards and completion of link lines

which were contributory factors for delay in execution of the schemes. The Committee had observed further that while in some cases energising of the electric traction lines had been delayed due to delay in completion of work of erection of sub-stations and transmission lines by the power supply authorities or delay in getting copper conductors, steel sections, AC EMUs and other materials, there had not been proper planning and coordination with other authorities while preparing the final estimates of schemes and setting target dates for their implementation. As a result of this, the period of the projects had to be spread over resulting in upward revision of estimates and overhead expenses. The Committee had also hoped that delay in execution of electrification of railway lines due to delay in cabling of long distances telecommunication circuits could henceforth be obviated as this job which was previously the responsibility of P & T Department had now been taken up by the Railways. The Committee had finally urged that gaining from the experience, the Railway Board would take urgent steps to ensure that there was no avoidable delay in completion of targets once fixed, so that rise in cost of the projects and delay in energising the tracks are obviated.

63. Noting the observations of the Committee the Ministry of Railways stated in their reply that the Railways had been suitably instructed that electrification works wherever in progress should not normally wait for completion of yards, remodelling works except in exceptional cases.

64. Reiterating that very close coordination with other agencies and meticulous planning had been ensured in all cases at all stages, it was stated by the Ministry of Railways that the reasons for delays in the completion of electrification schemes were due to circumstances beyond the control of that Ministry.

65. The Committee were also assured in reply that Railways had been advised and that the Ministry of Railways would also take measures to ensure that there was no delay in completion of Electrification work on account of cabling works.

66. Plan-wise targets for energisation and outlay are given below:

Plan	Distance to be covered		Financial	
	Targets	Achievements	Targets	Achievements
	(in kilometres)		(in crores rupees)	
IInd	1322	216	80	52·89
IIIrd	1760	1746	70	80·71
*Three Annual Plans	917	905	50·04	36·14
IVth	1200	932	73	67·67

*No advance target for energisation was fixed for three annual plans. The figure for target for this period indicated above, has been worked out on the basis of target dates of completion for individual schemes. As regards financial target and achievement, no plan-wise outlay was fixed for three annual plans. The figure shown under 'Target' is worked out by adding year-wise budget allotment.

67. Thus the shortfall during the Second Plan was 1106 kms. There was no shortfall during the Third Plan and the shortfall during the three annual plans was negligible being only 12 R kms. During the Fourth Plan, the shortfall was 268 route kms.

68. The representative informed the Committee during evidence that in the Second Plan only 747 kilometres were sanctioned although the provision was 1322 kilometres; and out of these 747 kms. some of them were sanctioned only in the latter part of the Plan because it involved new technology and things had to be imported and remodelling work was to be taken up. Out of these 747 kms. 500 kms. were carried forward to the Third Plan.

69. Spelling out the reasons for shortfall during the Second Plan the representative of the Department of Railways stated during evidence that:

> "In the Second Plan came our very first attempt at electrification, and we were completely dependent on imported equipment—whether it was for overhead constructions or components for the overhead constructions or whether it was for electric locomotives—and it was in this Plan that we also decided that we should start building up a base for indigenisation of the whole electrification scheme, knowing that without this a fairly large amount of electrification cannot be done. This we achieved only by about the end of the Third Plan.

Another thing was that, for this electrification, a lot of track work had to be done in advance. This took a long time to complete and it was only in the subsequent Plan that we were able to identify many problems and proceed to resolve them. Yard re-modelling is involved and unless the yard is re-modelled, we cannot electrify. That is the main reason for the shortfall in the Second Plan.

70. The Committee have been informed that the target for energisation originally fixed for Fourth Plan was 1700 kms. At the time of Mid-term Appraisal, this target was lowered down to 1200 route kms. It has been stated that the plan was revised in consultation with the Planning Commission since the originating traffic did not come up to expectation on which the original plan was framed. The proposed outlay was also reduced from Rs. 82 crores to Rs. 73 crores. Out of this lowered target of 1200 kms. actual energisation was achieved on 932 kms. and out of a total outlay of Rs. 82 crores which was subsequently lowered to Rs. 73 crores at the time of reappraisal, expenditure actually incurred was Rs. 67.67 crores. The actual expenditure has been less than even the reduced allocation due to:—

(i) the need to slow down the progress of work on the Panskura-Haldia Section as there has been some delay in the completion of the Haldia Port Project for serving which this project was mainly designed. The general marshalling yard and the bulk handling yard are still under completion by the Haldia Port Project Authorities.

(ii) Need to slow down completion of Virar-Ahmedabad scheme in view of urgent flood protection works like raising of tracks taken up during electrification works, delay in receipt of imported telecommunication cables and accessories, delay in power supply from Maharashtra State Electricity Board etc.

(iii) the slowing down of the Waltair-Kirandul Project because of the necessity to redesign the electrification scheme in view of the proposal to increase the trailing loads of the ore trains in order to cope with the movement of 12 million tonnes of iron ore per annum instead of 6 million tonnes originally envisaged; and

(iv) delay in supply of some meterials like telecommunication cables.

71. The following projects were taken up for electrification during Fourth Plan period:—

(i) Virar-Ahmedabad section of Western Railway.

(ii) Panskura-Haldia section of South Eastern Railway.

(iii) Tundla-Delhi.

(iv) Waltair-Kirandul.

(v) Madras-Vijayawada.

(vi) Madras-Trivellore.

72. The up-to-date progress on the various projects, the period of delay, if any, and increase in the cost together with the reasons therefor are given in the succeeding paragraphs.

(i) *Virar-Ahmedabad section of the Western Railway.*

73. In the note submitted in October, 1973 to the Estimates Committee, it was indicated that due to delay in the receipt of telecommunication cables this project might be completed by March, 1974 instead of by December, 1973. It was also mentioned that the Ahmedabad-Baroda section had already been energised in March, 1973. In March, 1974, the Committee were informed that the section between Baroda and Bhistan had been energised leaving the section between Virar and Bhistan (200 Kms.) still to be energised. The reasons for delay in energising the remaining section were given as under:—

(a) The electric supply for two of the sub-stations, *viz.* Palghar and Gholvad, was to be arranged by the Maharashtra State Electricity Board. This supply was not yet available because at the time of erection their main transformer at Tarapore toppled over and sustained damage. The damaged transformer had since been sent to the manufacturers for repairs and it was expected back in August/September, 1974.

(b) Full supply of telecommunication cables against the orders placed this project had not yet been received. In the meantime 50 Kms. of cables had been diverted from other railways and about 30 kms. were expected from M/s. Hindustan Cables Ltd.

74. The Committee were informed subsequently that Telecommunication cables required for Bhistan-Virar section were to be supplied by

Hindustan Cables Ltd. against an order placed in May, 1971. As Hindustan Cables Ltd. did not effect the supplies in time, 80 Kms. of cables required to complete the works upto Virar were diverted from Central Railway to avoid hold up of Railway Electrification Works.

75. The energisation of the complete section was completed in December, 1974.

76. The cost of the project had increased from Rs. 32.06 crores to Rs. 35.30 crores mainly due to additional facilities required in the Loco Shed, provision of certain additional equipment in the DC area and also due to general increase in the material prices.

(ii) *Panskura-Haldia section of the South Eastern Railway.*

77. As in March, 1974, out of 69 route kms., wiring had been completed on 59 route kms. from Panskura to Durgachak. Further progress could not be made because the bulk handling yard and the general marshalling yard for the Haldia Port are still incomplete. The original target date for this project was July, 1973 but this was revised to December, 1973 partly due to the fact that the imported telecommunication cables were not expected to be received in time and partly because the progress on the Haldia Port works did not warrant an early completion of the work. Also, the law and order position in this area had not been good resulting in obstruction to the progress of work.

78. According to information received from the Ministry of Railways in October, 1974, the electrification work on Panskura-Haldia section of the South-Eastern Railway was expected to be completed by March, 1975. In accordance with the information furnished in reply to Lok Sabha unstarred question No. 4767 dated the 25th March, 1975 the section from Panskura to Durgachak was energised in February, 1975 the balance was expected to be energised by June, 1975.

79. It is understood that Haldia Port is likely to be commissioned only by September, 1975. Hence it will be seen that the electrification of the section will be ready considerably in advance of the commissioning of the Port.

80. The estimated cost of this work has increased from Rs. 3.11 crores to Rs. 3.39 crores due to the following reasons:—

(a) Increase in price of telecommunication cables and signalling equipment and

(b) Increase in the cost of establishment.

(iii) *Tundla-Delhi Section*

81. Contracts for supply and erection of overhead equipment, switching stations, booster transformer stations, traction sub-stations, have already been awarded and casting of foundations for OHE masts is in progress. Several ancillary civil, electrical and signal and telecommunication works are also in progress. In this project, erection of 132 KV transmission line is also involved. The contract for the transmission line has also been awarded.

82. This project was proposed to be completed by September, 1975 but due to various constraints, such as non-availability of material trains consequent upon shortage of coal, limitation of funds due to the economy directive of the Government in August, 1973 etc., it was likely to be postponed to middle of 1976. However, according to the reply to Lok Sabha starred Question No. 207 dated the 4th March, 1975 the project is now expected to be completed by December, 1976.

83. Due to increase in prices of materials and escalation of labour costs the estimated cost of the project is likely to increase beyond the original estimate of Rs. 22.45 crores. The revised estimated cost is Rs. 35.87 crores.

(iv) *Waltair-Kirandul Section*

84. The contracts for overhead equipment and sub-stations have already been awarded. Tenders for civil engineering works associated with traction sub-stations, switching stations, cables huts, repeater stations, are under-finalisation. Several other ancillary works are also in progress.

85. This project was originally planned for completion by July, 1975 but material modifications had to be carried in this project for augmenting the throughout of this section by increasing the trailing loads of ore trains in order to move 12 million tonnes of traffic per annum instead of 6 million tonnes originally envisaged. Consequently, the cross section of the overhead wire had to be increased as also the number of sub-stations. The original estimate of Rs. 19.06 crores is being revised to cater for the increase in the scope of work and the increase in prices.

86. It is anticipated that this project may now be completed in December, 1976.

(v) *Madras-Vijayawada Section*

87. Contracts for supply and erection of overhead equipment, switching stations, booster transformer stations and traction substations, have been awarded. The tender for supply and erection of remote control

equipment is under scrutiny. Ancillary civil, electrical and signal and telecommunication works are in progress.

88. This project has since been bifurcated into two sections, *viz.*, Madras-Gudur and Gudur-Vijayawada and placed under the administrative control of the General Manager, Southern Railway and General Manager, South Central Railway respectively. This bifurcation became necessary because in the meanwhile electrification of Madras-Trivellore was also approved and it was considered desirable that each Railway Administration should look after its own portion of the work. The Madras-Vijayawada Section was originally targetted to be completed in March, 1976. The Project is now expected to be completed during 1977-78.

89. The project was originally estimated to cost Rs. 32.55 crores. It has been stated that due to the bifurcation of the original project it was not possible to indicate the revised cost for the present.

(vi) *Madras-Trivellore Section*

90. As in March, 1974, ancilary civil, electrical and signal and telecommunication engineering works were in hand. A letter of intent for a traction substation had been issued.

91. The abstract estimate indicated a cost of Rs. 3.80 crores but this was likely to go up because of the rise in prices of materials and cost of labour. The detailed estimate was under consideration.

92. The project was expected to be completed during 1977-78.

93. It has been stated in a note furnished to the Committee in October, 1974 that the target dates for electrification of Madras-Vijayawada and Madras-Trivellore sections were fixed in July, 1972. However, due to financial stringency, it has not been possible to allot adequate funds for electrification projects during 1973-74 and 1974-75. The financial stringency is expected to continue during the next financial year also.

94. In view of the above adequate funds could not be allotted for electrification of Madras-Vijayawada and Madras-Trivellore sections during 1973-74 and 1974-75. Further, due to constraints in financial resources during the current year, allotment of funds for these projects had to be reduced to a certain extent recently. Neither does it appear possible to find adequate funds during the next year also. This will have some adverse effect on the progress of these schemes. Under the difficult financial circumstances, postponement of the target dates of completion of these schemes is considered inevitable. The earlier anticipation of completion of these projects during 1977-78 may not now materialise due to the above reasons. No firm target dates for completion of these projects have been fixed so far in view of uncertain resource position.

Telecommunication Cables

95. It will be observed from the preceding paragraphs that one of the reasons for slowing down the progress of electrification of various projects in the past has been delay in supply of Telecommunication Cables and other equipments. It has been stated in this connection that after taking over the responsibility of communication circuits from P & T Department in 1968, Railways initiated action to develop capacity for the hitherto imported telecommunication cables with M/s. Hindustan Cables Ltd., a public sector undertaking. Till such time this firm successfully manufactured and supplied the cables to Railways' requirements, it was necessary to import the requirements of Railway Electrification Projects. Accordingly after finalising all the technical and commercial aspects with M/s. Hindustan Cables Ltd., the first order was placed on them for 154 kms. in May, 1971. Though the delivery was to commence from September, 1971 onwards at 15 kms. per month, the firm have been able to supply only 40 kms. till September, 1974. In other words, the manufacture of these cables in bulk production is yet to be established.

96. As stated above the requirements of Railway Electrification Projects are reviewed and are imported through orders placed from time to time. A statement showing brief details of the orders placed to meet the requirements of various Railway Electrification Projects, is given in Appendix-I.

97. *Accessories* :—In order to commission the cables, accessories like loading coil joints, transformers, joint boxes etc. are also required. These were also being imported, along with the cables. Railways took steps to develop indigenous capacity for these accessories also. However, till such time the indigenous capacity for these accessories is established, the requirements have necessarily to be met from import. Besides, the accessories are of various types like Cast Iron Boxes, Transformers, Special compound, tapes, instruments, condensers etc. and hence indigenous development has to be pursued with many manufacturers, depending on the nature of item. This is a continuing process. However, through sustained efforts it has been possible to develop capacity for some of the items like transformers, loading coil joints, joint boxes etc. The balance items which are still to be imported are building-out net works, adhesive and anti-corrosives tapes, instruments etc. A statement showing the orders placed for the accessories for various Railways Electrification Projects is given in Appendix-II. It will be seen therefrom that while the full requirements of accessories for Virar-Ahmedabad Railway Electrification were imported, some requirements of Tundla-Delhi and Waltair-Kirandul were obtained indigenously.

Performance of Hindustan Cables Ltd.

98. As stated above, the Railway Board initiated action with Hindustan Cables Ltd., after taking over the responsibility of the communication circuits from Posts and Telegraphs Department. The first order was placed in May, 1971 and even after three years they have not yet been able to establish bulk production. However, the firm have been promising to improve their rate of supply from time to time, and accordingly further orders for 250 kms. were placed in September, 1973. In all, therefore, the firm has been given orders for 404 kms. out of which they have supplied only 40 kms. so far. In other words they have more than adequate orders at present.

Future requirements in 5th Plan

99. The Railway Board had proposed to electrify 1800 Route kms. They have already placed orders for the requirements of Tundla-Delhi Railway Electrification (259 Route kms.), Waltair-Kirandul Railway Electrification (471 Route kms.) and 63 per cent of Vijayawada-Madras Railway Electrification's requirements (433 Route kms.). The balance requirements of Vijayawada-Madras Railway Electrification and the full requirements of the remaining Projects proposed in the 5th Plan namely Madras-Trivellore (42 kms.), Bhusaval-Nagpur (393 kms.) and Durg-Nagpur (255 kms.) are still to be procured. Depending upon the performance of M/s. Hindustan Cables Ltd., *vis-a-vis* the requirements of these Projects the cables may have to be either procured from Hindustan Cables Ltd. or through import in case Hindustan Cables Ltd. cannot meet the requirements.

100. During evidence before the Committee, the representative of the Ministry of Railways stated the position as follows:—

> "It is true that we did face this problem of tele-communication cables, because the Hindustan Cable factory was there to supply us the cable. We tried our best to get the required cables from that factory. If only they cannot supply it, we have to float tenders and get it from abroad. Hindustan factory promised us 15 kms. a month. That means 180 kms. a year. But in practice they were not able to give us more than 40 kms. or so. They had various problems like shortage of power supply etc. Now they are slowly coming up. So, in these past three or four months we expected them to supply us the required quantity of cables but we found that they were not able to supply them. Therefore, we were to go with a tender and get foreign exchange. So this has been one of the reasons for our less expenditure on this project."

101. The Committee have already commented upon the progress in respect of individual projects till the end of the Third Plan in their original Report on the subject. The shortfall in the achievements during the three Annual Plans has been negligible, being only 12 kms.

102. As regards the Fourth Plan, the Committee find that originally the target for energisation was fixed at 1700 kms. which was lowered down to 1200 kms. at the time of Mid-Plan review in consultation with the Planning Commission since the originating traffic did not come up to expectation on which the original Plan was framed. The outlay was also reduced from Rs. 82 crores to Rs. 73 crores. The actual achievements, however, came out to 932 kms. and the expenditure during the Plan period was Rs. 67.67 crores on this account.

103. The Committee note that the shortfall during the Fourth Plan was mainly due to slowing down on the following three projects viz. (i) Panskura-Haldia, (ii) Virar-Ahmedabad Scheme, and (iii) Waltair-Kirandul Project. The Committee understand that slowing down on the Panskura-Haldia and Waltair-Kirandul projects was more or less due to the reasons beyond the control of the Ministry of Railways.

104. As regards the third project viz., Virar-Ahmedabad Section, the delay was partly due to delay in receipt of imported tele-communication cables and accessories and delay in power supply from the Maharashtra State Electricity Board and partly due to the need for taking up flood protection works like raising of tracks. While the Maharashtra State Electricity Board may have their own problems in regard to supply of power for the project, the Committee feel that with proper survey of routes it should have been possible for the Ministry of Railways to undertake flood protection works and to avoid delays on this account. Advance planning in regard to imported equipment could also have minimised the delays to certain extent.

105. The Committee note that there have also been delays on other projects taken up for electrification during the Fourth Plan period. The target of completion of Tundla-Delhi Section has been put off from September, 1975 to December, 1976. The Madras-Vijayawada Section, which was originally targeted to be completed in March, 1976 is now expected to be completed in 1977-78. While the Committee note the reasons for delays in the completion of these projects, they would like to emphasise that unless all out efforts are made through continuous vigilance to achieve the targets now fixed in respect of these projects, it may become all the more difficult to achieve the overall targets for the Sixth and Seventh Plans during which periods even larger energisation is envisaged.

106. The Committee are disappointed to learn that most of the requirements of telecommunication cables and other accessories for Railway Electrification works continue to be imported and M/s. Hindustan Cables have not been able to come up to expectations in regard to indigenous manufactures so far. While concerted efforts should be made to obtain all the equipments required for Railway Electrification indigenously, it should be possible to obtain these items in time from foreign sources through advance planning. Now that future requirements of telecommunication cables and other accessories can be assessed—based on the programme of energisation, the Ministry of Railways should take appropriate action to ensure that all these items are obtained in time through indigenous sources as far as possible and the delay in receipt of these items does not cause delay in completion of the electrification projects as per the schedule.

F. Decentralisation of Railway Electrification Organisation

107. In paras 3.42 and 3.43 of their 70th Report (Fourth Lok Sabha), the Committee had expressed the view that the reasons advanced for decentralisation of the centralised Railway Electrification Organisation *i.e.*, economy and efficiency were not amply borne out by the facts as brought out before the Committee. They had expressed their doubts whether this had been a wise step to decentralise a well-knit compact organisation which had acquired the technical know-how and which was stated to have achieved a pace of work comparable with that of other advanced countries of the world. Since the decentralisation had already taken place, they did not desire to make any further comments on this issue. They had, however, suggested that the Ministry of Railways should keep a careful watch over the developments in this regard and report to Parliament after a couple of years as to what extent economy and efficiency had been achieved as a result of re-organisation of the "Railway Electrification".

108. In para 3.44 the Committee had urged that proper accounting of the work-load of electrification of the railways, the expenditure incurred thereon and the progress made therein, should be maintained in the zonal railways as also in the Ministry of Railways (Railway Board) so that a clear indication about the progress of work and expenditure involved in electrification of Railways was clearly discernible.

109. Government in their reply had stated that as recommended by the Committee, a report would be submitted to Parliament after a couple of years on the economy and efficiency achieved as a result of re-organisation of the Railway Electrification Organisation.

110. Stating the position about the implementation of these recommendations, the Ministry of Railways in their office Memorandum dated the 20th January, 1973 have set out the results of the review of the work of the re-organised set up. The main points made by the Ministry in the O.M. are stated briefly as under:—

(i) *Economy*.—The reorganisation has resulted in reduction of gazetted cadre with consequent savings in expenditure from 1970 onwards. The direct savings on gazetted posts only amount to about Rs. 2.0 lakhs from 1st December, 1967 to 31st December, 1971. In addition, the hired accommodation in Calcutta was also given up on 29th December, 1969 and this resulted in a net saving of about Rs. 0.5 lakhs from 1968 to 1971. The total net reduction in expenditure thus amounts to Rs. 2.5 lakhs.

(ii) *Efficiency*.—Viewed from the criterion of the pace of progress before and after reorganisation it is premature to apply this yardstick because so far only one major work *viz.*, that of Virar-Sabarmati Railway Electrification has been sanctioned after the reorganisation and this has yet to be completed. In the case of continuing works, however, the rate of progress has been maintained at the former level.

Also as a result of the reorganisation, the unitary character of the organisation to look after the works of various disciplines like civil engineering, electrical engineering and ST engineering has been maintained by placing all the officers under the control of one Head of the Department. At present, however, this Head of the Department has other works also to look after, therefore, certain marginal changes are under consideration to make the organisation still more effective.

(iii) *Accounts*:—After the reorganisation the maintenance of accounts and booking of expenditure as such have not been materially affected because of the well-standardised procedures adopted on all the Railways. In regard to the financial control and advice, however, the situation has somewhat altered. In the erstwhile Railway Electrification certain norms and traditions had been built up. Moreover, as there was one organisation dealing with all the contractors, there was uniformity of approach. This has, however, got disturbed after the reorganisation but in any case the situation now prevailing is not different from what is happening in the case of other works and there is no great difficulty worth mentioning.

(iv) *Surveys*:—For future schemes of electrification, the surveys have now to be undertaken by individual teams created for the purpose and manned by the officers of the Zonal Railways. The arrangement has the advantage in having the officers forming the survey team, drawn from the same Railway and as such they have considerable fund of local knowledge; but on the other hand they have the disadvantage of not having previous experience in this type of specialised work. This is being overcome by arranging for experienced officers to head the survey team.

(v) *Conclusion*:—While by and large the revised set up of the Railway electrification organisation has functioned satisfactorily, some marginal adjustments are considered necessary both at the central level as well as the zonal level in order to strengthen the organisation so as to cope with the increased tempo of activity and also to achieve greater effectivity. Besides the fact that the number of schemes in hand has considerably increased and the electrification works are now spred over five railway systems concurrently, the scope of work has also increased in respect of sub-station works and transmission lines and telecommunication cables which were formerly not being handled by the Railways. While these changes would not alter the basic character of the organisation they would make it more effective thus leading to further improvement in efficiency.

111. In a note furnished to the Committee in October, 1974 it has been stated by the Ministry of Railways that since the reorganisation was carried out, railway electrification projects on areas widely apart are under execution. Tundla-Delhi Project in the north Virar-Ahmedabad in the West, Panskura-Haldia in the east, Madras-Gudur, Madras-Trivellore and Vijayawada-Gudur in the South and Waltair-Kirandul in the South-East are in hand. It would be difficult to compare the organisation for these projects with what would have been the organisation if the old Railway Electrification Organisation had to handle these projects, and to work out the likely savings.

112. Asked the extent to which, the twin objectives of economy and efficiency had been achieved as a result of decentralisation and reorganisation of Railway Electrification Oaganisation the representative of the Ministry of Railways stated during evidence that one of the major difficulties was that the electrification organisation set up was mainly a constructional organisation; they had done absolutely no research or development and nor was it possible for it to do it. Yet is got involved in the manufacture of locomotives. It was obvious and even

the original collaborators were also of the view that it would not be feasible for an organisation divorced from research and designing to do development work. And as the base of indigenisation was also growing, it was evident the organisation would not be capable of carrying on this work.

113. He further stated that it was also not possible for an organisation to supervise, from a place like Calcutta, the entire electrification works all over the country. A decision was, therefore, taken that the actual execution of electrification should be decentralised and that research and design work should be concentrated in the R. & D. Organisation, where other disciplines were also situated alongside. That had produced better results both in terms of indigenisation of equipment and in terms of R. & D. work that was being done on the overhead structures.

114. Asked to indicate the achievements resulting from indigenisation of equipment and R. & D. work that was being done on the overhead structures, it has been stated by the Ministry that the erstwhile Railway Electrification Organisation during its existence of about 11 years had established about 60 indigenous sources of supplies of items pertaining to traction installations, which were initially imported. Most of the items had been indigenised by the Railway Electrification. However, there were only single sources of supplies for some items.

115. The Committee have been informed that during the period of about six years the Traction Installation Wing of the Research Designs and Standards Organisation is in existence, 45 new indigenous sources have been established by it. Now there are more than one supplier for many items. This not only has diversified sources of supply but also has introduced an element of competition.

116. Of the four items still to be indigenised at the time of reorganisation, indigenous manufacture of 25 KV line type lighting arrestors, distance protection relays, and stainless steel fasteners has been established. As regards the only item still to be produced indigenously, stainless steel wire ropes, Research Designs and Standard Organisation are continuing efforts with two firms to develop the product indigenously.

117. As regards research and development it has been stated that Research Designs and Standard Organisation are conducting trials with aluminium/aluminium alloy overhead equipment, which if proved successful, will lead to considerable saving in the cost of overhead equipment as well as foreign exchange. Research Designs and Standard Organisation are also developing in collaboration with University of Rourkee static protection relays. Success in this effort will lead to production of more reliable equipment, which can also do with little maintenance.

Research Designs and Standard Organisation have also developed in collaboration with Jadavpur University a modified type of insulator to overcome problems of industrial and marine pollution, which is proposed to be tried out in a fairly big way before it is adopted as standard for polluted areas.

118. Regarding the experience about the survey of electrification schemes after the reorganisation of the Railway Electrification. It has been stated that after the reorganisation of Railway Electrification the following surveys have been carried out and in most cases the survey team consisted of majority of officers with the background of Railway Electrification. They carried out the job satisfactoritly:—

1. Waltair-Kirandul	Surveys already completed.
2. Tundla-Delhi	
3. Bhusaval-Nagpur	
4. Durg-Nagpur	
5. Delhi-Bina	Survey completed.
6. Sitatampur-Garhara	Survey report under examination.

119. Asked how far re-organisation had resulted in greater efficiency and economy in the matter of surveys, it been stated that it is not possible to compare economics of carrying out surveys before and after the reorganisation of the Railway Electrification because survey teams now are required to study the following aspects which were not being undertaking previously:—

(i) Power supply arrangements (in initial railway electrification schemes, sub-stations were provided by Power Supply Authorities. Now Railways provide their own sub-stations).

(ii) Changes in tele-communication system. (Formerly P & T Department used to arrange for cabling of tele-communication circuits. Now Railways provide their own tele-communication cables for railway tele-communication circuits.

120. Asked if sufficient number of experienced officers were now available to head the survey teams which may be required in greater number in view of the need for accelerated electrification on Indian Railways, it has been stated by the Ministry of Railways that no difficulty is anticipated in conducting surveys in future as local expertise is getting built up.

121. The Estimates Committee (1968-69) had been informed that during the ten years from 1958 which the Railway Electrification was set up till April, 1968, the Railway Electrification Organisation at Calcutta had been able to electrify 2534 Route Kms./6247 track kms. It had been claimed that the pace achieved by the organisation during the second and third plan periods was well-worth comparable with those of other advanced countries of the world. In addition to the electrification work, the Railway Electrification Organisation also gave Technical Advice for electrification schemes of zonal railways. The organisation was also able to achieve overall economyt in standardising the design in overhead equipment and power supply installation and thus reduce overall cost of electrification. It was also able to ensure availability and utilisation of critical items of supply like copper conductors, tubes, insulators etc. and carry out a concurrent assessment of overall progress of all connected works under execution. The organisation had been able to make an outstanding contribution in the development of indigenous items for overhead equipment, switching stations and remote control equipment over years and thus eliminate the use of imported equipment in the electrification works. The Railway Electrification was responsible to great extent in the design of electric rolling stock, their import purchases, and also developing their manufacture in the country. The organisation took up for the first time for Indian Railways cabling of the long distance tele-communication circuits which had hithertto been the responsibility of the P & T Department thereby increasing the overall control over the execution of projects.

122. Asked what had been the achievement in terms of route kilometres/track kilometres since 1968 and how the same compared with the progress achieved in the past the representative of the Ministry of Railways stated during evidence that during the time the Railway Administration at Calcutta was in charge of the project *i.e.*, by about 1967, the overall performance during the year came to about 833 track kilometres. Average for the second and third plans came to 735 track kilometres per annum. After that, during 1967-68, 1968-69 and 1969-70 it came to an average of 779 track kilometres. So the performance has been practically the same. After decentralisation of course during the Fourth Plan, the actual energisation had been a little less for the reasons explained elsewhere. During 1970-71 it was 364, for 1971-72 it was 523, for 1972-73 it was 325 and 1973-74 it was 319.

123. The Committee are constrained to note that, as already observed in their original Report hardly any concrete achievements in regard to economy and efficiency are discernible as a result of decentralisation of the Railway Electrification organisation. As regards Research and Development Work which is believed to have been ignored by the erstwhile organisation, any concrete achievements on the side of newly

constituted R.D.S.O. (Research, Designs and Standards Organisation) on which this function has been devolved are yet to be observed as a result of six years of their work. On the other hand, the Committee feel that judging from the net results in terms of electrification there has been a considerable fall in the rate of electrification even after conceding the extraneous factors responsible for slowing down the completion of electrification schemes. While the Committee would not at this stage question the desirability of the decentralisation of the Railway Electrification Organisation, they would like to emphasise that the real test of efficiency as a result of decentralisation should be that the speed of electrification should increase rather than decrease and there should be economy in cost. Since the need for electrification has now increased in the context of the existing situation of energy crisis and oil price hike in the world, the Committee would like Government to examine this matter in detail and ensure that organisational deficiencies do not hamper the speed of electrification of projects on the Railways.

NEW DELHI;
April 26, 1975.
Chaitra 6, 1897 (*S*).

R. K. SINHA,
Chairman,
Estimates Committee.

APPENDIX I

(*Vide* Para 96)

Particulars of Orders placed for Telecommunication Cables required for Railway Electrification Projects.

Main Cables

Virar-Sabarmati Railway Electrification (Total requirements 580 Kms.)

IMPORTED

Group	Contract No. and date	Quantity	Name of supplier	Supply	
				Commencement	Completion
		KMS.			
Group 32	70/RE(S)/466/22 dated 30-6-70	174	M/s Finnish Cable Works Helsinki (Finland)	January '71	August '71
Groups 30 & 31	(a) 71/RE(S)/466/32(FCW) dated 21-8-71	39	"	June '72	June '72
	(b) 71/RE(S)/466/32 (Nichimen) dated 28-6-71	213	M/s Nichimen, Tokyo	February '72	April '72
			INDIGENOUS		
	(c) 71/RE(S)/466/31 dated 29-5-71	154	M/s Hindustan Cables Ltd., Rupnarainpur.	Supplied only 40 Kms. till Stpt. '74	

Note :—On account of failure on the part of Hindustan Cables Ltd., to supply cables in time we had to divert cables from other sources.

Panskura-Haldia (Total requirements 100 Kms.)

Group	Contract No. and date	Quantity	Name of supplier	Supply	
				Commencement	Completion
			IMPORTED		
		KMS.			
	72/RE(S)/466/32 dated 4-12-72	100	M/s Siemens West Germany	July '73	December '73
Tundla-Delhi (*Total requirements* 340 *KMS.*)					
	(a) 72/RE(S)/466/32 (Siemens) dated 4-12-72	199	M/s Siemens, West Germany	July '73	December '73
	(b) 72/RE(S)/466/32(FCW) dated 20-11-72	90	M/s Finnish Cable Works, Helsinki (Finland)	July '73	February '74
	(c) 74/RE(S)/466/12 (Siemens) dated 23-4-74	51	M/s Siemens, West Germany	Yet to commence supply.	
Waltair-Kirandul (*Total requirement* 501 *KMS.*)					
			IMPORTED		
		KMS.			
	(a) 72/RE(S)/466/32 (AP) dated 29-11-72	155	M/s Cables Delyon, France	August '73	January '74
	(b) 72/RE(S)/466/32 (FCW) dated 29-11-72	36	M/s Finnish Cables Works, Helsinki (Finland).	July '73	February '74
			INDIGENOUS		
	(c) 72/RE(S)/466/84 dated 29-9-73	250	M/s Hindustan Cables Ltd.	Yet to commence supply. Delivery @ 30 Kms/PM from June '74	
			IMPORTED		
	(d) 74/RE(S)/466/12 (Siemens) dated 23-4-74	60	M/s Siemens West Germany	Supply yet to commence.	

APPENDIX I

(*Vide* Para 97)

Particulars of Orders placed for Telecommunication Accessories required for Railways Electrification Projects

Name of the Project	Contract No and date	Name of supplier	Supply — Commencement	Supply — Completion	Imported/ Indigenous
1	2	3	4	5	6
Virar-Sabarmati Railway Electrification					
Group 32	70/RE(S)/466/10 dated 8-7-70	M/s Finnish Cable Works, Helsinki (Finland)	July '71	March '73	All items imported.
Groups 30 & 31	(a) 70/RE(S)/466/39 (Sumitomo) dated 31-7-71	M/s. Sumitomo Shoji Kaisha Ltd. Tokyo (Japan)	February '72	February '72	Do.
	(b) 70/RE(S)/466/39 (FCW) dated 31-7-71	M/s. Finnish Cable Works Helsinki (Finland)	April '72	August '72	Do.
	(c) 72/RE(S)/466/37 (SSK) dated 3-8-72	M/s Sumitomo Shoji Kaisha Ltd. Tokyo (Japan)	December '72		Do.
Panskura-Haldia	Same orders as against Groups 30 & 31 of Virar-Sabarmati Railway Electrification.				
Tundla-Delhi & Waltair-Kirandul	(a) 72/RE(S)/466/31(FCW) dated 6-2-73	M/s. Finnish Cable Works, Helsinki (Finland)	Supply yet commence		Imported.
	(b) 72/RE(S)/466/9 (SSK) dated 10-4-73	M/s. Sumitomo Shoji Kaisha Ltd. Tokyo (Japan)	Sept. '73	December '73	Do.
	(c) 72/RE(S)/466/31 (EE) dated 29-1-73	M/s Eastern Electronics Faridabad	*Supply commenced not yer completed		Indigenous.
	(d) 73/RE(S)/466/16 (Asian Electronics) dated 17-4-73	M/s Asian Electronics, Bombay	Supply not yet commenced		Do.

Note :— The supply of condensers have not yet commenced as the firm has not been successful to produce acceptable prototype.

The accessories were partially imported and partially procured through indigenous sources, as per details given above for the items indicated below:

1	2	3	4	5	6
	Imported Items		*Idigenous Items (major items)*		
	(a) Building out networks		(a) Transformers 3 sizes.		
	(b) Tapes.		(b) Loading coil joints.		
	(c) Blow Lamp Petrol.		(c) Condenser 4 wire & 2 wire.		
	(d) Signalling transformers.		(d) Transformer Joint boxes.		

APPENDIX III

Summary of Recommendations/Conclusions contained in the Report

S. No.	Reference in Para No. of the Report	Recommendations/Conclusions
1	2	3
1	25	The Committee note that steam traction is technologically inferior to diesel and electric locomotion in about every respect. Between the two modes of traction, the electric locomotive can haul a larger trailing loan than the diesel locomotive on steep gradients. The Committee also note that a review of the relative economics and operational efficiency of electric traction *vis-a-vis* diesel and steam tractions in the light of steep rise in the oil prices and its scarcity, confirms that there is scope for stepping up the electrification on the Railways. The Committee observe that these considerations have been kept in view while outlining the future electrification programmes during the three successive Plans. The Railways' Plans for electrification of trunk routes are expected to be stepped up to about 1800 kms. during the Fifth Plan, rising to 3000 route kms. in the Sixth Plan and reaching 4000 route kms. during the Seventh Plan.
2	26	The Committee further note that, to guard against the interrupted power supply resulting from the shortage of power supply, the Ministry of Railways propose to set up their own generating stations, one each in West Bengal, Bihar and U. P. during the Fifth Plan. It is also proposed to replace and augment the generating capacity at Central Railway's existing Thermal Power station at Thakurli near Kalyan by

1	2	3
		2×110 M.W. sets. This proposal is also included in the Fifth Plan proposals of Ministry of Irrigation and Power (now Ministry of Energy).
	27	The Committee hope that timely decisions will be taken in regard to final approval of these proposals and allotment of funds etc. so that the generating stations will be available to supplement the power supplies from other sources at an early date.
	28	Since the power shortage is not likely to be overcome in the near future, Railways may have to set up their own power houses in the Sixth Plan also. The Committee recommend that this matter may be examined in depth and necessary programmes for setting up additional power stations by the Railways drawn up well in advance.
4	37	The Committee note that action to prepare a perpective Plan for electrification of the Indian Railways forming a part of the corporate plan of the Indian Railways has been initiated in implementation of the recommendation contained in para 2.37 of their original Report (70th Report—Fourth Lok Sabha). The Committee also note that out of 16,000 route kms. that would warrant electrification by the end of the Seventh Plan, Government propose to electrify 8,800 route kms upto that period at a cost of Rs. 950 crores excluding the cost of rolling stock. The Committee are, however, unhappy to note that this is only an initial version of the plan which was initiated in 1969 and it will take yet another two or three years to bring out a final detailed version. It is surprising it should take nearly two Plan periods for the Railways to prepare even a 15 year plan for electrification of Indian Railways. It is noteworthy that by the time the Plan is ready, the first five years of the corporate plan will have elapsed. The Committee are led to the conclusion that Government have not given serious consideration to the implementation of the recommendation of the Committee that it deserved. In view of the

1	2	3
		importance that Railway electrification has acquired in the context of international energy crisis and the rising oil price in the world, the Committee strongly recommend that urgent measures should be taken to complete the detailed perspective plan so that the same could be executed in a phased manner during the next 15 years and all slippages and delays resulting from want of working details obviated.
5	48	The Committee note that it is proposed to energize 1800 route kms. during the Fifth Five Year Plan, out of which electrification on projects totalling 1474 kms. was already in progress at the beginning of Fifth Five Year Plan. In addition to the completion of all these sections, new works are likely to be started on another 3000-3500 route kms. during the Plan.
	49	The Committee, however, find that though some of the schemes like Bhusaval-Nagpur and Durg-Nagpur have been found financially viable, it has not been possible to sanction these schemes so far, nor does it appear likely that these schemes will be sanctioned during 1975-76 due to financial stringency.
	50	The Committee further note that due to uncertain financial resources, it has not been possible to fix the targets in respect of the following sections comprising 3121 Route kilometres, viz. Bhusaval-Nagpur, Durg-Nagpur, Delhi-Bina, Madras-Arkonam-Guntakal-Hospet, Sitaram-Garhara, Bhilai-Delhi-Rajahara, Vadodra-Ratlam and Godhra Anand, Arkonam-Erode, Jalarpettai-Bangalore and Rampur Dumra-Mughalsarai.

1	2	3
	51	Further, as would be seen under the section dealing with the progress of individual electrification projects during the Fourth Plan, the targets in case of a number of schemes are getting delayed.
	52	Having noted the progress in electrification of projects so far, the Committee are doubtful if the targets for electrification at the proposed rate will be achieved during the Plan period. In the opinion of the Committee unless effective remedial measures are taken urgently, the slippages are bound to be appreciably large.
	53	The Comittee would, therefore, urge Government to take early decisions on allocations in the light of the perspective plan and keeping in view the need for accelerated electrification in the context of the world oil crisis. The Committee further recommend that targets in respect of all the sections should be fixed immediately and effective steps taken to ensure that the same are adhered to strictly.
6	59	The Committee note that advance action for electrification of projects totalling 2,105 route kms. which might be energised during the Sixth Plan is in progress and surveys are in various stages of completion. The Committee also note that surveys of the remaining sections are under consideration. Measures have also been taken to ensure that the electrification on sanctioned projects is not held up due to track works and remodelling of yards etc.
7	60	The Committee also note that the State Electricity Boards have already been advised of the possible requirement of power for electric traction and have been requested to take these loads into account while formulating their plans. As some more sections have been included in the latest Plan, the State Electricity Boards would be advised afresh about the changes.

1	2	3
	61	The Committee attach great importance to this aspect of the matter and would like the Ministry of Railways to give this matter careful attention and to assiduously pursue with the State Electricity Boards concerned to ensure that the electrification of the various projects is not held up on this account.
8	101	The Committee have already commented upon the progress in respect of individual projects till the end of the Third Plan in their original Report on the subject. The shortfall in the achievements during the three Annual Plans has been negligible being only 12 kms.
	102	As regards the Fourth Plan, the Committee find that originally the targets for energisation was fixed at 1700 kms. which was lowered down to 1200 kms. at the time of Mid-Plan review in consultation with the Planning Commission since the originating traffic did not come up to expectation on which the original Plan was framed. The outlay was also reduced from Rs. 82 crores to Rs. 73 crores. The actual achievements, however, came out to 932 kms. and the expenditure during the Plan period was Rs. 67.67 crores on this account.
	103	The Committee note that the shortfall during the Fourth Plan was mainly due to slowing down on the following three projects *viz.* (i) Panskura-Haldia (ii) Virar-Ahmedabad Scheme and (iii) Waltair-Kirandul Project. The Committee understand that slowing down on the Panskura-Haldia and Waltair-Kirandul projects was more or less due to the reasons beyond the control of the Ministry of Railways.
	104	As regards the third project *viz.*, Virar-Ahmedabad Section, the delay was partly due to delay in receipt of imported tele-communication cables and accessories and delay in power supply from the Maharashtra State Electricity Board and partly due to the

1	2	3
		need for taking up flood protection works like raising of tracks. While the Maharashtra State Electricity Board may have their own problems in regard to supply of power for the project, the Committee feel that with proper survey of routes it should have been possible for the Ministry of Railways to undertake flood protection works and to avoid delays on this account. Advance planning in regard to imported equipment could also have minimised the delays to certain extent.
	105	The Committee note that there have also been delays on other projects taken up for electrification during the Fourth Plan period. The target of completion of Tundla-Delhi Section has been put off from September, 1975 to December, 1976. The Madras-Vijayawada Section, which was originally targetted to be completed in March, 1976 is now expected to be completed in 1977-78. While the Committee note the reasons for delays in the completion of these projects, they would like to emphasise that unless all-out efforts are made through continuous vigilance to achieve the targets now fixed in respect of these projects, it may become all the more difficult to achieve the overall targets for the Sixth and Seventh Plans during which periods even larger energisation is envisaged.
9	106	The Committee are disappointed to learn that most of the requirements of telecommunication cables and other accessories for Railway Electrification works continue to be imported and M/s. Hindustan Cables have not been able to come up to expectations in regard to indigenous manufactures so far. While concerted efforts should be made to obtain all the equipments required for Railway Electrification indigenously, it should be possible to obtain these items in time from foreign sources through advance planning. Now that future requirements of telecommunication cables and other accessories can be

1	2	3
		assessed—based on the programme of energisation, the Ministry of Railways should take appropriate action to ensure that all these items are obtained in time through indigenous sources as far as possible and the delay in receipt of these items does not cause delay in completion of the electrification projects as per the schedule.
10	123	The Committee are constrained to note that, as already observed in their original Report hardly any concrete achievements in regard to economy and efficiency are discernible as a result of decentralisation of the Railway Electrification organisation. As regards Research and Development Works which is believed to have been ignored by the erstwhile organisation, any concrete achievements on the side of newly constituted RDSO (Research, Designs and Standards Organisation) on which this function has been devolved are yet to be observed as a result of six years of their work. On the other hand, the Committee feel that judging from the net results in terms of electrification there has been a considerable fall in the rate of electrification even after conceding the extraneous factors responsible for slowing down the completion of electrification schemes. While the Committee would not at this stage question the desirability of the decentralisation of the Railway Electrification Organisation, they would like to emphasise that the real test of efficiency as a result of decentralisation should be that the speed of electrification should increase rather than decrease and there should be economy in cost. Since the need for electrification has now increased in the context of the existing situation of energy crisis and oil price hike in the world, the Committee would like Government to examine this matter in detail and ensure that organisational deficiencies do not hamper the speed of electrification of projects on the Railways.

APPENDIX IV

(*Vide* Introduction)

Analysis of Recommendations/Conclusions contained in the Report

1. CLASSIFICATION OF RECOMMENDATION

A. Recommendation for improving the Organisation and Working:—

S. Nos. 2 to 10.

B. Miscellaneous Recommendation:—

S. No. 1.

MGIPND—L—252 LS 8-5-75—1100.