ESTIMATES COMMITTEE 1961-62

HUNDRED AND FIFTY-SIXTH REPORT

(SECOND LOK SABHA)

MINISTRY OF STEEL, MINES AND FUEL

National Mineral Development Corporation Ltd., New Delhi

(Reports and Accounts)



LOK SABHA SECRETARIAT NEW DELHI March 1962/Phalguna 1883 (S)

Price: Re. 0.45 nP.

ANDHRA PRADESH G. R. Lakshmipsthy Chetty and Sons, General 16. Merchants & News Merchants Newpet, Agents, Chandragiri, Chittoor District (Andhra Pra-

Secunderabad.

desh).

- 3. Hyderabad pot, Abid Road (Foundry), Hyderabad. Road (Gun
- 4. International Consultants Corporation, 48, C. Marredpally (East), Secunderabad-3.
- 5. K. Sons, (Andhra Pradesh).
- 6. M. S. R. Murthy & 20. Company, Visakhapatnam,
- 7. People's Book House, B-2-829/1, Nizam Shahi Road, Hyderabad-1.
- 8. The Triveni Publishers, 21. E. M. Masulipatnam. Publishers, 21. E. M. Kone

BIHAR

- Kitab Ghar, Amar Diagonal Road, Tamshedpur-1.
- . Book Centre, Op Patna College, Patna. Opp. 10. Book
- 11. 'Jagriti', Bhagalpur-2.

GUJARAT

- 12. Chanderkant Chiman Lal Vora, Law Publishers and Law Book Sellers, P.B. No. 163, 57/2, Ghandi
- Bhavnagar.
- Milap, 14. Lok Court District Road, Bhavnégar.

The New 15. Company, Book Ellis Bridge, Ahmedabad-6. Swadeshi Vastu Bhan-

dar, Booksellers etc., 29. Jamnagar.

KERALA

- 2. Hindustan Diary Pub- 17. C. V. Venkitachala ni lishers, Market Street, Iyer, Near Railway 31. Station, Chalakudi.
 - Book De- 18. International Road (Gun House, Main Book 32. Trivandrum. 18a. M. Mukanda Krishna
 - Nayak, Manjeshwar S. K. Cannore Distt., Kerala 33. State.

MADHYA PRADESH

- Jabalpur-1.
- The House, Near Library, Opp. Old Building. High Court Indore.

MADRAS

- Gopalkrish-(Shri Gopal 37. The lorth Chitrai Depot Mahal), North Street, Madura.
- i. The Kalpana Pub-bay-7.
 lishers, Booksellers, Tri-38. Sahitya Sangam, Booksellers, 44, Lok Manya 22. The Presidency Book Supplies, 8-C, Pycro-ft's Road, Triplicane,
- Madra=5. S. Krishnaswami
 - Company, P. O. Teppa- 39. kulam, Tiruchirapalli-2.

25. (Vacant)

MAHARASHTRA:

- Lambert & 101, Mahatma Company, I3. Gandhi Samiriti Trust, Tower, Fort, Bombay.
 - The Book 27. The House, Current Maruti Lane, Raghunath Dadaji Street, 42. Pervaje's Book House, Bombay- I.

- Orde 28. D. B. Taraporevala & Sons, Co., (P) Limited, 210, Dr. Naoroji Road, Bombay-1,
 - Deccan Book Stall. Fergusson College Road, Poons-4.
 - 30. The Good Composions, Raspura, Baroda. Compa-The Imperial Book
 - Depot, 266, Mahatma Poons. Road, Gandhi The International Book House, Private 9, Ash Lane, Ltd., Gandhi Road, Mahatma
 - Bombay-1. The International Book Service, Deccan Gymkhana, Poona-4.
- Sons, Cloughpet, P. O. 19. Modern Book House, Shop No. 1/80, Netaji Ongole, Guntur District 286, Jawahar Ganj, Subhash Road, Marine Drive, Bombay-2.
 - National Law 35. The New Indore Company (P) Book Limited, Mahai, Kitab 188-90 Dadabhai Dr. Naoroji Road, Bombay.
 - 36. The New Book Depot, Modi No. 3, Nag-New Book Depur.
 - Popular Book (Registered), La-Depot Road, Bommington
 - sellers, 44, Lok wan,
 Vasent Bhandar, Dadar, Bombay-28,

MYSORE

- Venkataramiah & H. Sons, Vidyanidhi Book Depot, New Circle, Mysore. Statue
- Press. 40. Makkalapustaka Balamandira, Gardhi Nagar, Bangalore-9.
- 41. People's Book House, Opp. Jaganmohan Palace, Mysore-1.
- Koppikar Road, Hubli.

HUNDRED AND FIFTY-SIXTH REPORT OF THE ESTIMATES CORRIGENDA

COMMITTEE (SECOND LOK SABHA) ON THE NATIONAL MINERAL DEVELOPMENT CORPORATION LTD.

Page 11, para 26, marginal heading : for Disposa'

read 'Disposal'

Page 11, para 26, line 11 : for '10:5' read '10.5'

Page 15, para 40, last line : for '1:36' read 'Project

Page 23, Serial No. 15, line 11: for 'ar eestimated'

read 'are estimated'

Page 23, Serial No. 16, line 8 : for 'anp' read 'and'

Page 26, Appendix II, Serial No. 2, line 1 : for 'I' Page 4, footnote, line 1: after 'contained' insert 'in' Page 8, Para 18, line 3 : <u>for</u> 'inter-adia' <u>read</u> 'inter-alia'

CONTENTS

Composition of the Committee		•		•		•	•	•	(ii
Introduction	•	•	•	•	•	•	•	•	(iii)
I. INTRODUCTORY	•		•	•	•	•	•	•	:
II. Functions:									
(a) Projects assigned to N	MD	C ^	•	•		•	•	•	2
(b) Exploitation of Iron (Ore in	the P	ublic	Secto	r.		•	•	2
III. ORGANISATION AND ADMINIS	STRAT	ION :	:						
(a) Board of Directors	•				•				4
(b) Recruitment and Serv	rice R	ules							5
(c) Training	•	•			•		•	•	6
IV. Projects:									
(a) Kiriburu Iron Ore Pr	oject	•		•		•	•	. •	8
(i) Background [].	•		•		•			•	8
(ii) Consultants .					•	•	•	•	8
(iii) Estimates .	•	•	•		•	•	•	•	9
(iv) Variations between				-	pated (expen	diture	•	10
(v) Delay in the Exec	ution	of the	: Proj	ect	•	•	•	•	10
(vi) Time-Schedule	٠.	•	.•	•	•	•	•	•	10
(vii) Disposal of Fine			ring	•	•	•	•	•	11
(viii) Plant and Mach	•		•	•	•	•	•	•	12
(ix) Laying of Railwa	•	C8.	•	•	•	•	•	•	13
(b) Bailadila Iron Ore Pr	øject	•	•		•	•	•	•	14
(c) Panna Diamond Mini	ng Pr	oject						•	14
(d) Khetri Copper Projec	t				•			•	16
(e) Daribo Copper Projec	at .					•			17
V. Estimates and Expenditure	t		•	•	•				18
Appendices:									
I. Statement showing the sum: the E.C. contained in the			clusio	ns/Re	comn	nenda:	tions	of ·	20
II. Analysis of the recommend	etion	cont	eined	in the	Reno	rt.	_		26

ESTIMATES COMMITTEE (1961-62)

CHAIRMAN

Shri H. C. Dasappa

Members

- 2. Shri Pramathanath Banerjee
- 3. Shri Chandra Shankar
- 4. Shri V. Eacharan
- 5. Shri Ansar Harvani
- 6. Shri H. C. Heda
- 7. Shri M. R. Krishna
- 8. Rani Manjula Devi
- 9. Shri Bibhuti Mishra
- 10. Shri J. G. More
- 11. Shri G. S. Musafir
- 12. Shri Padam Dev
- 13. Shri Jagan Nath Prasad Pahadia
- 14. Shri Chintamani Panigrahi
- 15. Shri Panna Lal
- 16. Shri Karsandas Parmar
- 17. Shri P. T. Thanu Pillai
- 18. Shri P. T. Punnoose
- 19. Shri Rajendar Singh
- 20. Shri K. S. Ramaswamy
- 21. Shri Satis Chandra Samanta
- 22. Shri Vidva Charan Shukla
- 23. Shri Kailash Pati Sinha
- 24. Shri M. S. Sugandhi
- 25. Shri Motisinh Bahadursinh Thakore
- 26. Shri Mahavir Tyagi
- 27. Pandit Munishwar Dutt Upadhyay
- 28. Shri Ramsingh Bhai Varma
- 29. Shri Balkrishna Wasnik
- 30. Shri K. G. Wodeyar.

SECRETARIAT

Shri N. N. MALLYA-Deputy Secretary.

(ii)

INTRODUCTION

- I, the Chairman of the Estimates Committee having been authorised by the Committee to submit the Report on their behalf, present this Hundred and fifty sixth Report on the Ministry of Steel, Mines and Fuel—National Mineral Development Corporation Ltd.
- 2. A general examination of the published Annual Reports and Accounts of the National Mineral Development Corporation Ltd., for the year ending 31st March, 1960 was conducted by the Sub-Committee of the Estimates Committee on Public Undertakings whose Report thereon was finally approved by the whole Committee.
- 3. A statement showing an analysis of the recommendations contained in the Report is also appended (Appendix II).
- 4. The Committee wish to express their thanks to the officers of the Ministry of Steel, Mines and Fuel and the National Mineral Development Corporation Ltd., for placing before them the material and information that they wanted in connection with the examination of the Annual Reports and Accounts of the National Mineral Development Corporation Ltd.

New Delhi;

March 17, 1962.

Phalguna 26, 1883(5).

H. C. DASAPPA, Chairman, Estimates Committee.

INTRODUCTORY

The National Mineral Development Corporation Ltd. Constitution. was registered on November 15, 1958 as a private limited company under the Companies Act, 1956 with an authorised capital of Rs. 15 crores. The Corporation has been set up in pursuance of the directions contained in the Industrial Policy Resolution of April, 1956 that minerals included in Schedule 'A' thereof would be developed by the State in future. The subscribed capital of the Corporation as on the 31st March, 1960 was Rs. 40.53 lakhs. The immediate need for its formation was a contract entered into with Japan for the supply of 2 million tons of iron ore per annum with effect from 1964 and the consequent need to develop and exploit the Iron Ore at Kiriburu for fulfilling the above contract.

FUNCTIONS

2. The function of the Corporation being the exploitation of minerals in the public sector, excluding oil, natural gas, coal and lignite, it has been authorised to take on lease or otherwise acquire mines for prospecting and developing them for commercial purposes.

(a) Project assigned to N.M.D.C.

3. The projects so far assigned to the Corporation by Government and the date of their assignment are as follows:—

(i) Kiriburu Iron Ore Project (Orissa)	. 15-11-1958
(ii) Panna Diamond Mining Project, (Medhya Pradesh)	. 8-12-195 9
(iii) Khetri Copper Project, (Rajasthan)	8-3-1961
(iv) Daribo Copper Project, (Rajasthan)	8-3-1961
(v) Bailadila Iron Ore Project (Madhya Pradesh).	. 8-3-1961

(b) Exploi- 4. At present the Iron Ore is being exploited by or Iron Ore with the participation of the Central Government by the in the public following undertakings:—

- (i) Bolani Ores Ltd. (Central Government's shares 50.5 percent and by the private firms 49.5 percent).
- (ii) Hindustan Steel Ltd. (Barsua and Rajhara Mines)—(wholly owned by Central Government).
- (iii) The National Mineral Development Corproration Ltd. (wholly owned by Central Government).
- 5. During evidence it transpired that in the initial stages no thought had been given by Government to the question of entrusting the exploitation of iron ore to one Corporation only. Historically, when the Iron Ore Mines were being developed by the Hindustan Steel Ltd., and Bolani Ores Ltd., the National Mineral Development Corporation Ltd., was not in existence. It has been stated that in future the

development of iron ore can be entrusted to the National Mineral Development Corporation. In fact, the assignment of the latest mine viz., Meghahataburu for the supply of iron ore to the Hindustan Steel Ltd, to this Corporation is under the active consideration of the Government. The question whether the present system should be allowed to confinue or there should be one Corporation to handle the exploitation of iron ore has yet to be considered by Government.

6. The Committee feel that existence of different Suggestion agencies for a like function, viz., the development and for entrusting of exploitation of iron ore, is neither conducive to economy mining of nor to efficiency. A single Corporation has obvious iron ore to advantages of pooling of resources, technical skill, experi-ration. ence, plant and machinery, research and training, etc. The Committee, therefore, recommend that Government mav consider the feasibility of having only one Corporation for the mining of iron ore in the public sector.

ORGANISATION AND ADMINISTRATION

(a) Board of Directors

Composition. 7. The Corporation has a Board of Directors consisting of 8 Members and a whole time Chairman. Of the 8 Directors, two are non-officials and 6 officials. The Chairman is functioning as the Chief Executive of the Corporation having overall responsibility for management of all the projects entrusted to the Corporation.

Appointment of full time Directors.

8. At present all Directors on the Board of the Corporation are working part-time, except the Chairman and the General Manager of Kiriburu Project. Regarding the desirability of having more full-time Directors, it was stated by the representative of the Ministry that the matter had already been considered by them. In respect of importants projects. Government had decided to make the Chief Executive Officer of the Project a Director on the Board. The Committee feel that since the National Mineral Development Corporation has been entrusted with the execution of a number of projects it may be desirable to consider the appointment of more full time directors in course of time when the magnitude of operations increase so that they may be able to give exclusive attention to the affairs of the Corporation. Directors could also be entrusted with the responsibility of certain Divisions e.g., Planning, Projects, Administration and Establishment and Finance and Accounts Divisions.

Restricting the number of Directorship by a Member of Board. 9. It is observed that the representative of the Ministry of Finance on the Board of the Corporation is also serving on the Boards of as many as 20 other public undertakings or bodies and that he had attended only four out of the 12 meetings of the Board held in 1960-61. It was admitted by the Secretary of the Ministry that he had a heavy load of work and it was difficult for him to devote much time to the meetings of the Board. Obviously an official who is a Director on the Boards of such a large number of public undertakings, cannot discharge his functions on all the bodies effectively and efficiently, in addition to performing his normal secretarial duties. Similar situation has been noticed in the case of other public undertaking also. The Committee are, however, glad to note that Government

have recently taken a decision* that "no officer who is also assigned ordinary Secretariat duties should be appointed Directors in more than 3 or 4 Companies at the maximum. Finance Officers should be selected as Directors only from such Officers, who though working in the Ministry will not be overburdened with other duties and will devote mainly to serving as Directors of Public Undertakings." They hope that these decisions will be implemented at an early date.

10. It is also seen that in regard to the appointment of nonofficial Directors, people without any special qualifications are sometime put on the Boards. The Committee suggest that one of the considerations in making appointments of officials or non-officials to the Board of Public Undertakings should be aptitudes and special qualifications and experience in that particular field so that they could be of real use and assistance to the undertaking.

(b) Recruitment and Service Rules

- 11. The Committee were informed that rules governing the conditions of service and recruitment of the staff of the Corporation had not yet been finalised. The Corporation had framed a set of ad-hoc Service Rules which required amendment in several respects having regard to the additional projects that had been entrusted to the Corporation. As regards Recruitment Rules, these had to be drafted afresh because they would to a large extent depend on the formulation of Cadre Schemes which had been taken up by the Corporation recently. At present the recruitment to the various posts was being done on an ad-hoc basis and the qualifications and experience for the posts were prescribed in an ad-hoc way, having regard to the nature of the duties and responsibilities which devolved on them. The Chairman of the Corporation assured the Committee that they would be able not only to complete their review of the existing Service Rules but also to draw up their Cadre Schemes and connected Recruitment Rules by the end of the year. Committee hope that regular Service and Recruitment Rules for the employees of the Corporation would be finalised as early as possible**.
- 12. In this context the Committee regret to note that so Model Rules far no model rules governing the Service conditions and for all Public recruitment procedures for the employees of public under-takings.

^{*}Decisions of the Government of India on the recommendations contained the Report of the Krishna Menon Committee and other reports and studies on the running of public sector undertakings.

^{*}At the time of factual verification of the Report, the Ministry intimatted that these rules have since been finalised and approved by the Board. at its meeting held on 20-2-1962.

each undertaking frames its own Service Rules and recruitment procedures which not only entail considerable time being spent in their formulations but also involve consequent delays in their application and ad-hoc appointments to various posts all of which are likely to attract unnecessary criticism. Further, this has also resulted in diverse rules and procedures being followed by the various public undertakings. The Committee recommend that with a view to achieving some kind of uniformity in the public undertakings in this respect Government should formulate a set of Model Service and Recruitment Rules indicating the basic scales of pay for different categories of posts for adoption with suitable modifications by all the public undertakings.

(c) Training

Training
Scheme for
the Kiriburu
Project.

13. The Corporation has started a training scheme involving a capital cost of Rs. 3.73 lakhs and recurring cost of Rs. 80,000 per annum, for the training of operatives and junior supervisory and technical personnel required for the Kiriburu Iron Ore Project. For this purpose, a Training Institute with a Workshop, Lecture Room and the required machinery and tools etc. has been set up at Kiriburu. Institute started functioning in February, 1961 trainees in the category of operatives. The trainees being paid stipends and given free accommodation and other facilities. The number of trainees will be progressively increased so that the need of trained technical personnel for the project can be effectively met as the mining scheme gets under way. So far as the other projects are concerned, the Corporation has not progressed as much as the Kiriburu Iron Ore Project. The question of setting up a centralised training scheme to cater effectively to the needs of individual projects is stated to be under the active consideration of the Corporation.

Integrated Training Scheme.

- 14. The Committee were informed that no coordination had so far been maintained by the Corporation with the training schemes of the Hindustan Steel Ltd., the Orissa Mining Corporation or the National Coal Development Corporation. The question whether any of the existing training institutes of either of Hindustan Steel Ltd. or National Coal Development Corporation could be made use of to meet the requirements of the Corporation by providing additional seats in them would be investigated.
- 15. In this connection, it was stated by the Chairman of the Corporation that since the types and categories of operatives for every mining industry were basically the same, it should be possible to evolve an integrated training scheme to cater to the requirements of the entire mining industry in

the public sector. The Committee regret the present tendency of each public undertaking to start its own training schemes without coordinating its requirements of training with those of other public undertakings functioning broadly in the same field of technology. They feel that it would contribute to a substantial economy of expenditure and effort if integrated training schemes for all public undertakings dealing with a particular or allied industries are formulated and organised on a common basis. The Committee suggest that the feasibility of organising such schemes may be examined by Government at an early date.

- 16. The Consultants to the Corporation have stressed Training of the necessity for the training of three of the senior super-Personnel visory class and 7 of the Foremen and junior supervisory class in Japan in view of the lack of highly mechanised modern mines in India and the introduction of certain new types of machinery and modern methods of ore washing at Kiriburu. Further, the operation, maintenance and repair of plant, apart from its installations, required advanced training. In this connection, it was stated that the training in Japan would be for electrical and mechanical fitters only as there were no iron ore mines in that country. ratives selected for such training would be called upon to look after maintenance work only. For practical training in iron ore mining, the Corporation might have to send the higher technical personnel to other countries which had such mines. Regarding the number and category of persons required for foreign training, the type of training to be given to them etc., no assessment was stated to have been made so far. It was stated that since the mine would go into full production at the beginning of 1964 only, it would be wasteful to recruit personnel far in advance of requirements and keep them idle before the mines ready for operation.
- 17. While the Committee agree that such persons should not be recruited much in advance of their requirements. they consider it necessary that there should be forward planning in this respect so that a clear picture regarding number and categories of personnel required, courses of training to be given to them and the places of such training etc. was available well in advance. On the basis of such a plan a phased programme for their training in appropriate institutes abroad could be formulated so as to ensure that they are available to man the mines when they go into production.

IV

PROJECTS

(a) Kiriburu Iron Ore Project

(i) Background

18. The Kiriburu Iron Ore Project is the first one assigned to the Corporation. The mining of ore is essentially a part of a composite project. which, contemplates the provision of a railway link between Sambalpur and Titlagarh and between Bimalgarh to Kiriburu and the expansion of port facilities at Visakhapatnam. project came to be implemented because of the interest of the Japanese Steel Industry in securing long-term supplies of high grade Iron Ore from India, for which purpose offered to advance a credit of \$8 million dollars in Yen. This offer paved the way for a further and large credit of \$ 20 million from the U.S. President's Asian Development Fund to meet the foreign exchange requirements of the rest of this composite project. Under the agreement concluded with the Japanese Government in March 1958, the Government of India stands committed to supply two million tons of high grade Iron Ore to Japan per annum commencing from April 1964. The Iron Ore is to be raised at the Kiriburu hill.

The Kiriburu Project area comprises of two hills—Kiriburu and Gandiburu, named for convenience as North Block and South Block respectively. The results of the exploratory and prospecting work in the North Block showed that the total reserves available in the deposit upto a level of 2,600 feet was 114 million tons. After making a discount for laterite and soil, the total reserves work out to 111.5 million tons, the average recovery of plus ½" ore is estimated at 60 per cent and the average grade of the reserves 63.65 per cent Fe.

(ii) Consul-

19. To provide consultancy services for the planned development of the Kiriburu Project, global tenders were invited by the Ministry of Steel, Mines and Fuel in 1958. Tenders were received from 24 Foreign and two Indian firms. After scrutiny of the tenders by an expert Committee, appointed by the Ministry, the Japan Consulting Institute were appointed as Consultants on a consolidated fee of Rs. 16.8 lakhs, out of which Rs. 6.58 lakhs only is to be paid in Indian Rupees and the balance in Japanese Yens.

Regarding the experience of the Consultants, it was stated that the Institute was constituted recently and had no previous experience of serving as Consultants to any mining project, but its principal employees had developed large scale iron ore mines in other countries. The Committee were further informed that by virtue of the 'know-how' available with the institute, it should be possible for them to accomplish this job. The Committee hope that in this case the Consultants would prove equal to the task undertaken by them.

- 20. In regard to Bailadila Iron Ore Project or the Daribo Copper Project, the Corporation does not intend to engage any foreign firms for rendering Consultancy Services. A Planning Division is being set up at the Headquarters Office of the Corporation which, in due course, would draw up 'Project reports and render to the project administration such other services in the shape of technical guidance etc. as are expected from foreign Consultants.' The Committee are glad to note that steps to develop consultancy services in this field, which is likely to enlarge considerably in future, are being taken by the Corporation. They hope that their services would be available to other like projects also in future.
- 21. The total cost of Kiriburu Iron Ore Project is estimat- (iii) Betied at Rs. 9.06 crores of which Rs. 3.93 crores represent mates. foreign exchange component. The break-up of these estimates is given below: -

		(6		-101/
(1) Mining Division .				143 · 20
(2) Dressing Division				391 · 13
(3) Maintenance Division				23.89
(4) Water and Power			•	57· 0 0
(5) Development preparation and road	consti	uction.	•	77 · 70
(6) Administration			•	23.59
(7) Miscellaneous (contingencies etc.)				114-49
(8) Township		•	•	75.00
TOTAL			-	906.00

(Figures in labbs of Rs.)

22. It will be seen that in the above estimates a sum of Rs. 114.49 lakhs has been provided under the head Miscellaneous (Contingencies etc.). During evidence the representative of the Corporation explained that it was made up of import duty amounting to Rs. 48.22 lakhs, purchase of spare parts—Rs. 25.07 lakhs and contingencies Rs. 41.20 lakhs. Since contingencies do not normally include items like import duties and spare parts the classification of such items under the 'head' tends to create confusion. The Committee. therefore, suggest that to avoid any misunderstanding the classification of the various items in the estimates should be made under proper 'heads.'

(iv) Variations between estimates and anticipated expenditure. 23. It has been stated that there are indications of variations between the original estimates for the civil works and purchase of machinery and equipment and the anticipated expenditure. Such variations fluctuate both ways. In certain cases the estimates would be exceeded and, in certain other cases they would be below the estimates. Any unexpected increase in the capital outlay can well be met from the provision under contingencies referred to above (mentioned as Reserve Fund in the Projects Report) amounting to Rs. 41.20 lakhs.

(v) Delay in execution of the Project .

24. The Committee were informed that there had already been a delay of about six to eight months in construction work, procurement of plant and machinery, etc. for the Kiriburu Project. The delay was occasioned partly by the various procedural formalities that had to be gone through in regard to the purchase of plant and machinery. The Chairman of the Corporation emphasised that this delay would not contribute to any increase in the estimated cost of the Project except in the sense that where deferred payments were involved to the suppliers, the Corporation would be saddled with the interest charges on the deferred payments.

The Committee are rather surprised to learn that there would be no rise in the estimated cost of this project due to the delay of about 6 to 8 months, while in the past delays have partly contributed to the increase in the cost of projects like Steel Plants and Neyveli Lignite Corporation. It appears that there was sufficient "cushion" in the original estimates of the Project to cover up any increased cost. The Committee, however, hope that efforts would be made to keep the costs of the Project to the minimum at any rate within the original estimates.

(vi) Time Schedule. 25. The representative of the Corporation stated that although the original time-schedule stipulated the initial start up of the Kiriburu plant in January, 1963, according to the revised time-schedule it would now take place by the end of March, 1963. Thus altogether the Project would be behind the original time schedule by three months only. The rest of the year 1963 would be available for trial production and reaching the maximum rated capacity of the plant. In any case they would be in a position to meet the export demand to Japan from the beginning of the year 1964 as originally stipulated. While the Committee appreciate the above assurance, they would nevertheless urge that constant watch should be kept on the revised time and action schedules for the various operations so that they are completed by the target dates now fixed.

- 26. The percentage of fines likely to be mined along with (vii) Dispose lump on at Kiriburn is estimated at 40% of the total run of Fines and the lump ore at Kiriburu is estimated at 40% of the total run Sintering. of mine ore. The average iron content in the fines is likely to be little over 60%. Regarding the disposal of the fines the representative of the Ministry stated that till a year or two ago not much thought had been given by the Steel Plants or the Mine owners to the utilisation of fines which were being dumped into big heaps. With a view to conserve this national wealth, a Committee was set up by Government in 1960, to go into the question of utilisation of the fines, among other things. . As a result of the deliberations of this Committee, opinion had been veering round that sintering must play a very important role in steel production in the country. Tatas and Bhilai Steel Plants had built their sintering plants. sals for erecting sintering plants at Rourkela and Durgapur Steel Plants have been approved and the same are expected to be completed by about 1965. Further, large scale experiments had been conducted during the last one year in the National Metallurgical Laborartory. A few months ago the Ministry sent samples from the Kiriburu Mines also-ores as well as fines—and the latest report from the Director, National Metallurgical Laboratory showed that the fines could be sintered or briquetted for export or use in the Steel Plants. In this connection, the Chairman of the Corporation stated that the problem of fines would remain with them till they started the supply of requirements of the Hindustan Steel Ltd. which would accept not only the sized ores but the fines also.
- 27. It has been held by experts that sinter which is produced from fines, not only increases the output of blast furnace but results in a definite reduction in fuel costs. It is really surprising that while in Britain sintering is widely used for a long time and in 1953 the output of sinter amounted to 24 per cent of the total ore of 20 million tons consumed there. no thought was given to the utilisation of iron ore fines in the country till very recently.

If the production of fines at Kiriburu (i.e. 40 per cent of the total run of mine ore) is any guide, it would appear that in addition to the present production of 10:5 million tons of iron ore which is in lumps, seven million tons of ore would

†"

Besides converting unwanted fines into lump form sintering dirves off moisture, carbon diexide and sulphur from the ore. The porous nature of the sinter makes it move easily reducible in the blast furnace, the output of which is thereby increased. There is a considerable reduction in coke consumption per top of iron, but this is partly off-set by the coke breeze used in the sintering operation. However, coke breeze is a by-product from coke manufacture and is of considerably less value than furnace coke, so that there is a definite reduction in fuel costs."

approximately be produced in the shape of fines annually. That such an amount of mineral wealth remained unutilised and allowed to go to waste is most regrettable. The Committee recommend that Government should at least now take immediate and effective measures to ensure that sintering is invariably provided for the utilisation of iron ore fines so as to avoid the waste of national wealth.

(viii). Plant and Machinery. 28. The cost of the plant and machinery (including tools and equipment) so far procured for the Kiriburu Project or for which orders have been placed or are likely to be placed in the near future as well as the source of their procurement are given below:—

Name of the cou	ntry								Costs in lakhs of Rs.
ı. Japan .	•				•		•	•	185.25
2. U. S. A									154.71
3. West Germany						•			4.64
4. Italy									· 66
5. U.K.				•					· 34
		7	COTAL						345.60
Imported Equipms	nt b	rough	t in Ind	ia (s	ource	not ye	t knov	wn).	7:57
Indigenous .						•		•	22.02
		(GRAND	·Гот	'AL				375. 19

- 29. It will be seen that out of the total cost of Rs. 375 lakhs, Plant and Machinery worth Rs. 22 lakhs only (i.e. about 6%) has been procured from indigenous sources. It was stated that orders for Plant and Machinery required for the Project were generally placed on the basis of global tenders. Imports were resorted to only in cases where equipment was not available from indigenous sources. Before orders were placed abroad, the Development Wing of Commerce and Industry Ministry was invariably consulted and their clearance as also the clearance from the Ministry of Finance from the foreign exchange angle obtained. In this connection, it was explained during evidence that machinery from Japan was being purchased from out of the Yen credit of 8 million dollars which could only be utilised for the purchase of machinery from that country.
- 30. The procurement of Plant and Machinery from indigenous sources to the extent of 6 per cent only for this project is very low. The Committee feel that with a view to promote the manufacture of indigenous plant and machinery required by the various undertakings it is very essential to have

long term planning. Since the National Mineral Development Corporation Ltd. is responsible for the commissioning and operation of four other projects viz., Bailadila Iron Ore Project, Panna Diamond Mining Project, Khetri and Daribo Copper Projects, which are estimated to cost about Rs. 27 crores. and more of such projects may come to be assigned to the Corporation in future, a large amount of Plant and Machinery costing several crores of Rupees would be required by it. The Committee recommend that the Corporation should endeavour to intimate its requirements of Plant and Machinery etc. for these projects to the Development Wing of the Ministry of Commerce and Industry and Heavy Engineering Corporation, Ranchi and allied engineering Works sufficiently in advance so that efforts may be made to manufacture as much of machinery as possible indigenously thereby effecting substantial savings in foreign exchange.

- 31. The Committee understand that the railway and road (ix) Laying facilities being provided for the Kiriburu Project are expect-Lines. ed to be adequate. Approximately 22 miles of road are finally to be constructed in the project area to provide efficient means of communication inside the project. The Railways are constructing two new lines connecting Bimalgarh to Kiribury (26 miles) and Sambalpur to Titalgarh (114 miles) to enable the movement of the ore directly from Kiriburu to Visakhapatnam. Further, the question whether a distance of four miles between Karampada, which is the terminus proposed by the Railways for the Bimalgarh-Kiriburu line and the loading point at the mine should be treated as part of the branch line or as a private siding to be provided at the cost of the Corporation and maintained by the Corporation is under discussion with the Railway Board.
- 32. The Committee now understand that the Railway Board have since proposed that they will bear the entire capital and maintenance cost of the line from Karampada to Kiriburu (3.75 miles), but that a small increase in freight charge (51 nP. per ton) will then have to be paid for movement of the ore from Kiriburu to Vishakhapatnam. The proposal of the Railway Board is still under the consideration of Government.
- 33. The Committee feel that since transportation and communications are subjects of vital importance to the prosperity of the Project, it is very desirable that programme of laying the Railway lines should be completed by the time the Project goes into production. They also recommend that an early decision should be taken by the Government on the proposal of Railway Board in the matter of bearing the entire capital and maintenance cost of the Railway line from Karampada to Kiriburu.

(b) Bailadila Iron Ore Project

- 34. This project was assigned to the Corporation by Government in March, 1961. It envisages the development and working of the Bailadila Iron Ore deposits in Madhya Pradesh. It has been undertaken in pursuance of an agreement reached between the Government of India and the Government of Japan on the 8th March 1960, for supply to Japan of Iron Ore of approximately 4 million tons per annum from the year 1966, for a period of 15 years in the first instance. Japan has agreed to make available foreign exchange credit equivalent to Rs. 10 crores for purchase from abroad of machinery and plant for the Project. Like the Kiriburu Project, the Bailadila Project is also a composite project, contemplating:
 - (i) raising of ore at Bailadila at a rate of 6 million tons (to substitute supplies from Kiriburu region also);
 - (ii) transport to Visakhapatnam over a railway line to be constructed; and
 - (iii) expansion of loading arrangements at Visakhapatnam.

The total cost of this composite project is estimated at Rs. 77 crores, of which mining will account for Rs. 15 crores (Rs. 13 crores for construction and Rs. 2 crores for operation) for raising 4 million tons of iron ore; and Rs. 17 crores for raising 6 million tons of Iron Ore per annum.

35. The Indian Bureau of Mines have started exploration and prospecting work in this area and a scheme for exploration, submitted by them has been approved by the Corporation and is in progress. According to the time schedule submitted by the Bureau for the completion of the work of exploration, the work will be completed in a period of 16 months i.e. by the beginning of 1962. The latest assessment is that it may not be possible to complete the work before the end of 1962.

The Committee deplore that there has been a delay of about one year in the initial stage of this work. They hope that a detailed time and action schedule for all further processes involved in the completion of this project would be drawn up at an early date and it would be ensured that the mines are commissioned well in advance of the schedule for supplies of iron ore to Japan.

(c) Panna Diamond Mining Project

36. The occurrence of diamonds in Panna has been known for long and diamonds of the gem variety have continued to be exploited by primitive techniques. The industrial variety of diamonds, however, had no particular appeal or value in the past, since their industrial uses

Background.

had still to be discovered. Now-a-days diamonds occupy a place of increasing importance in industry. A whole range of precision tools, scientific instruments and drilling bits, to mention but a few examples, depend to a very considerable extent for their accuracy and utility on diamonds. It was in realisation of their industrial and scientific importance that Government decided to entrust the exploitation diamond resources of Madhya Pradesh to the Corporation in December, 1959.

- 37. Panna Diamond Project envisages the exploitation of diamondiferous deposits in Panna in the State of Madhya Pradesh so as to attain a target of annual production of 90,000 carats per annum by 1963. The provision included in the Third Plan for this project is Rs. 1.5 crores.
- 38. A Chief Engineer (Mining) for the Project was Progress appointed on 15th February 1960 who submitted a survey made so far. report on the prospecting of diamondiferous areas in Panna early in April, 1960. The present operations consist chiefly of pitting, trenching and working in sixteen areas out of twenty-three areas approved by the Board for prospecting.

- 39. In the Second Annual Report of the Corporation for the year 1959-60, it is stated that the schedule of detailed prospecting work during the year 1960 could not be adhered to for want of mechanical equipment and trained personnel. The representative of the Corporation informed the Committee that this had happened because at that time the projet had just started and adequate trained personnel could not be obtained in time. The performance this year had, however, exceeded the targets in several directions and delays had been reduced. The Committee hope that every effort will be made by the Corporation to ensure the timely completion of the Project so as to facilitate the attainment of the production target of 90,000 carats by 1963.
- 40. It was stated that the estimated annual production Estimated of diamonds from the Ramkherya gravels and from the Annual Pro-Majhgawan pipe, taken together, would total up to about Diamonds. 42,000 carats per annum when fully exploited by 1963. addition 30,000 carats of diamonds could be produced by working a second shift at Majhgawan, thus making a total of 72,000 carats per annum. Compared to the planned target of 90,000 carats this would still leave a gap of about 18,000 carats. To bridge this gap, they would have to go in for a new mine for which an additional provision of Rs. 1.25 crores would be required. The plan provision of Rs. 1.5 crores would meet the cost of the Ramkherya and Majhgawan schemes which is estimated at Rs. 1:36 crores

(Rs. 46 lakhs and Rs. 90 lakhs respectively), exclusive of the exploration and prospecting charges which would come up to Rs. 25 lakhs.

It is difficult to appreciate why there should have been such an under estimate of the financial provision in the Third Plan over the actual requirements therefor to reach the original target of 90,000 carats. It needs no reiteration that the original estimates should have been prepared realistically.

Cutting and Polishing of Diamonds.

41. It was stated that the production of Diamonds Panna had not been very significant hitherto and that cutting and polishing was being done by the indigenous industry. It was, however, a matter of some doubt whether, after the Corporation had gone into large scale production, the entire production could be handled by the indigenous cutting industry. The Chairman of the Corporation stated that no statistical information about the capacity industry in the country was available. The question whether some people in the diamond cutting industry should be trained for handling the entire production of the Corporation or the Corporation itself should take up the work relating to the cutting and polishing of diamonds was under The Committee are well aware of the special examination. skill necessary for quality cutting of diamonds but all the same would emphasise the desirability of creating adequate capacity in the country for cutting and polishing the diamonds produced by the Corporation. They hope that an early decision would be taken in the matter so that there would be no difficulty in getting the diamonds cut when production in the mines reached its full capacity.

(d) Khetri Copper Project

42. The Khetri Project was assigned to the Corporation on 8th March 1961 by Government and envisages a production of 10,000 tons of electrolytic copper per annum. The estimated reserves of Ore (Chal-copy rites) at Khetri, based on an investigation conducted by the Indian Bureau of Mines amount to 28.4 million tons of 0.8 per cent copper, 9.2 million tons of 1.5% copper and 2.6 million tons of 2.5% copper. The Indian Bureau of Mines is conducting further investigation to prove further reserves of Ore. The preliminary estimate of capital requirement for this Project is Rs. 10 crores for which a provision exists in the Third Plan. M/s. Western Machinery Company, a firm in the U.S.A. acting through and by their division M|s. Western Knapp Engineering Company have been appointed as Engineering Consultant for the Project. Under the terms of the

agreement, the Consultancy Services have been divided into three phases. As at present anticipated, the Consultants are expected to complete all the three phases of their services within a period of 36 months from the date of agreement viz., 23rd May 1961.

(e) Daribo Copper Project

- 43. The Daribo Copper Project was assigned to the Corporation at the same time as the Khetri Copper Project. The exploratory work so far undertaken have proved the existence of 0.5 million tons of Ore of 2.5 per cent. Cu content. As the ore body is irregular and further extensions of the deposits are believed possible the Indian Bureau of Mines is continuing exploratory mining. A pilot concentration plant has been set up by the Indian Bureau of Mines. Work on this project will commence a little later in such a manner as to commence production of concentrates by the time the smelter and refinery at Khetri go into production. The project envisages local production of concentrates capable of yielding 1,500 tons of metal per annum, smelter and refined at Khetri.
- 44. The Committee hope that every effort will be made to complete these Copper Projects in accordance with the time schedule as the delays in such cases invariably increase the estimated costs of the Project. In this context it may be pertinent to remark that as far back as the International Materials Conference classified Copper as a scarce material. There is little doubt, therefore, that there will always be a demand in the international market for this scarce material. The Committee would intensive prospecting for Copper and exploitation of the Ore by the Corporation with a view to meet the internal demand at least.

ESTIMATES AND EXPENDITURE

Capital

45. The authorised capital of the Corporation is Rs. 15 crores. As against this the fixed capital requirements for the five Projects entrusted to the Corporation as currently estimated are as follows:—

(Figures in Crores of Rs.)

Kiriburu		9.06
Panna .		1.50
Khetri .		10.00
Bailadila		13.00*
Daribo .		2.50
	TOTAL .	36.06

46. It was stated that the estimates of cost of Khetri, Daribo and Bailadila Projects were only preliminary and could be firmed up only after the detailed projects reports became available. As regards Panna Project, the question of increasing the provision of Rs. 1.5 crores by Rs. 1.25 crores had been taken up with Government. In addition working capital requirements of the Corporation would be Rs. 9 crores approximately.

The Committee were informed that the initial requirements of the capital of the Corporation were assessed taking the estimated cost of the Kiriburu Project into account. A reasonable margin was also kept as it was known that some other projects would also be entrusted to the Corporation for execution. However, in view of the estimated costs of the various projects, the capital structure of the Corporation would require revision.

47. The Committee feel that frequent revisions of capital structure of the public undertakings having regard to specified targets of production are not desirable as such revisions appear to indicate lack of proper planning. They

^{*}On the basis of production of 4 million tons, when it is later expanded to 6 million tons as envisaged, it is likely to be Rs. 15 crores (excluding Rs. 2 crores for operating capital.)

desire to suggest that the role of the Corporation may be carefully assessed from time to time and suitable provision made having regard to the projects entrusted to it and the targets expected to be achieved and avoid too frequent a revision in the capitral structure for the projects thus planned.

New Delhi; March 17, 1962. Phalguna 26, 1883 (Saka). H. C. DASAPPA, Chairman, Estimates Committee.

APPENDIX I

Statement showing the Summary of Conclusions/Recommendations of the Estimates Committee contained in the Report.

Sl. No.	to I	rence Para No. the port	Summary of Conclusions/Recommendations
	I	2	3
I		6	The Committee feel that existence of different agencies for a like function, viz. the development and exploitation of iron ore, is neither conducive to economy nor to efficiency. A single Corporation has obvious advantages of pooling of resources, technical skill, experience, plant and machinery, research and training, etc. The Committee, therefore, recommend that Government may consider the feasibility of having only one Corporation for the mining of iron ore in the public sector.
2		8	The Committee feel that since the National Mineral Development Corporation has been entrusted with the execution of a number of projects it may be desirable to consider the appointment of more full time directors in course of time when the magnitude of operations increase so that they may be able to give exclusive attention to the affairs of the Corporation. These Directors could also be entrusted with the responsibility of certain Divisions e. g. Planning, Projects, Administration and Establishment and Finance and Accounts Divisions.
		9	Obviously an official, who is a Director on the Boards of a large number of public undertakings, cannot discharge his functions on all the bodies effectively and efficiently, in addition to performing his normal secretarial duties. Similar situation has been noticed in the case of other public undertakings also. The Committee are, however, glad to note that Government have recently taken a decision that 'no officer who is also assigned ordinary Secretariat duties should be appointed Directors in more than 3 or 4 Companies at the maximum. Finance Officers should be selected as

2 3 1 Directors only from such Officers, who though work ing in the Ministry will not be overburdened with other duties and will devote mainly to serving as Directors of Public Undertakings.' They hope that these decisions will be implemented at an early date. The Committee suggest that one of the considerations 10 4 in making appointments of officials or non-officials to the Board of Public Undertakings should be aptitudes and special qualifications and experience in that particular field so that they could be of real use and assistance to the undertaking. The Committee hope that regular Service and Recruit-5 11 ment rules would be finalised as early as possible. 6 The Committee regret to note that so far no model rules 12 governing the Service conditions and recruitment procedures for the employees of public undertakings have been laid down by Government. They recommend that with a view to achieving some kind of uniformity in the public undertakings Government should formulate a set of Model Service and Recruitment Rules indicating the basic scales of pay for different categories of posts for adoption with suitable modifications by all the public undertakings. he Committee regret the present tendency of each public undertaking to start its own training The Committee 7 15 schemes without coordinating its requirements of training with those of other public undertakings functioning broadly in the same field of technology. They feel that it would contribute to a substantial economy of expenditure and effort if integrated training schemes for all public undertakings dealing with a particular or allied industry are formulated and organised on a common basis. The Committee suggest that the feasibility of organising such training schemes may be examined by Government at an eary date. 8 While the Committee agree that persons should not be 17 recruited much in advance of their requirements, they consider it necessary that there should be forward planning in this respect so that a clear picture regarding the number and categories of personnel required, courses of training to be given to them and the places of such training etc. was available well in advance. On the basis of such a plan a phased programme for their training in appropriate institutes abroad could be formulated so as to, ensure, that they are available to man the mines, when they go into production.

I	2	3
9	19	Regarding the experience of the Consultants, it was stated that the Japan Consulting Institute was constituted recently and had no previous experience of serving as Consultants to any mining project, but its principal employees had developed large scale iron ore mines in other countries. The Committee were further informed that by virtue of the 'know-how' available with the institute, it should be possible for them to accomplish this job. The Committee hope that the Consultants for the Kiriburu Iron Ore Project would prove equal to the task undertaken by them.
10	20	In regard to Bailadila Iron Ore Project or the Daribo Copper Project the Corporation does not intend to engage any foreign firms for rendering consultancy services. The Committee are glad to note that steps to develop consultancy services in this field, which is likely to enlarge considerably in future, are being taken by the Corporation. They hope that their services would be available to other like projects also in future.
II	22	The Committee suggest that to avoid any misunder- standing the classification of the various items in the estimates should be made under proper 'heads'.
12	24	The Committee are rather surprised to learn that there would be no rise in the estimated cost of this project due to the delay of about 6 to 8 months, while in the past delays have partly contributed to the increase in the cost of projects like Steel Plants and Neyveli Lignite Corporation. It appears that there was sufficient 'cushion' in the original estimates of the Project to cover up any increased cost. The Committee, however, hope that efforts would be made to keep the costs of the Project to the minimum at any rate within the original estimates.
13	25	While the Committee appreciate the assurance given by the representative of the Corporation that they would be in a position to meet the export demand to Japan from the beginning of the year 1964 as originally stipulated, they would nevertheless urge that constant watch should be kept on the revised time and action schedules for the various operations so that they are completed by the target dates now fixed.
14	26-27	It is really surprising that while in Britain sintering is widely used for a long time and in 1953 the output of sinter amounted to 24 per cent of the total ore of 20 million tons consumed there, no thought was given to the utilisation of iron ore fines in the country till very recently.

I 2 3

If the production of fines at Kiriburu (i.e. 40 per cent of the total run of mine ore) is any guide, it would appear that in addition to the present production of 10.5 million tons of iron ore which is in lumps, seven million tons of ores would approximately be produced in the shape of fines annually. That such an amount of mineral wealth remained unutilised and allowed to go to waste is most regrettable. The Committee recommend that Government should at least now take immediate and effective measures to ensure that sintering is invariably provided for the utilisation of iron ore fines so as to avoid the waste of national wealth.

15 30

The procurement of Plant and Machinery from indigenous sources to the extent of 6 per cent only for this project is very low. The Committee feel that with a view to promote the manufacture of indigenous plant and machinery required by the various undertakings it is very essential to have long term planning. the National Mineral Development Corporation Ltd. is responsible for the commissioning and operation of four other projects viz., Bailadila Iron Ore Project, Panna Diamond Mining Project, Khetri and Daribo Copper Projects, which ar eestimated to cost about Rs. 27 crores, and more of such projects may come to be assigned to the Corporation in future, a large amount of Plant and Machinery costing several crores of Rupees would be required by it. The Committee recommend that the Corporation should endeavour to intimate its requirements of Plant and Machinery etc. for these projects to the Development Wing of the Ministry of Commerce and Industry and Heavy Engineering Corporation, Ranchi and allied engineering works sufficiently in advance so that efforts may be made to manufacture as much of machinery as possible indigenously thereby effecting substantial in foreign exchange. savings

16 33

The Committee feel that since transportation and communications are subjects of vital importance to the prosperity of the Kiriburu Project, it is very desirable that programme of laying the Railway lines should be completed by the time the Project goes into production. They also recommend that an early decision should be taken by the Government on the proposal of Railway Board in the matter of bearing the entire capital anp maintenance cost of the Railway line from Karampada to Kiriburu.

Ì 2 3 The Committee deplore that there has been a delay of 17 34-35 about one year in the initial stage of exploration and prospecting work in regard to the Bailadila Iron Ore Project. They hope that a detailed time and action schedule for all further processes involved in the completion of this project would be drawn up at an early date and it would be ensured that the mines are commissioned well in advance of the schedule for supplies of iron ore to Japan. 18 The Committee hope that every effort will be made by the 39 Corporation to ensure the timely completion of the Panna Diamond Mining Project so as to facilitate the attainment of the production target of 90,000 carats by 1963. It is difficult to appreciate why there should have been 19 40 such an under-estimate of the financial provision in the Third Plan over the actual requirements therefor to reach the original target of 90,000 carats. It needs no reiteration that the original estimates should have been prepared realistically. The Committee are well aware of the special skill neces-41 20 sary for quality cutting of diamonds but all the same emphasise the desirability of creating adequate capacity in the country for cutting and polishing the diamonds produced by the Corporation. They hope that an early decision would be taken in the matter so that there would be no difficulty in getting the diamonds cut when production in the mines reached its full capacity. The Committee hope that every effort will be made to 21 complete the Copper Projects in accordance with the time schedule as the delays in such cases invariably increase the estimated costs of the Project. In this context it may be pertinent to remark that as far back as 1952, the International Materials Conference classified Copper as a scarce material. There is little doubt, therefore, that there will always be a demand in the international market for this scarce material. Committee would urge intensive prospecting for Copper and exploitation of the Ore by the Corporation with a view to meet the internal demand at least.

The Committee feel that frequent revisions of capital structure of the public undertakings having regard to specified targets of production are not desirable as such revisions appear to indicate lack of proper planning. They desire to suggest that the role of the Corporation may be carefully assessed from time to time and suitable provision made having regard to the projects entrusted to it and the targets expected to be achieved and avoid

projects thus planned.

too frequent a revision in the capital structure for the

APPENDIX II

(Vide Introduction)

Analysis of the recommendations contained in the Report.

- I. Classification of recommendations:
 - A. Recommendations for improving the organisation and working—
 S. Nos. 2, 3, 4, 5, 6, 8.
 - B. Recommendation for effecting economy—S. Nos. 1, 7.
 - C. Miscellaneous—
 S. Nos. 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22.
- II. Analysis of the Recommendations directed towards economy.

Sl. No.	No. as per summary of recomm- endations	Particulars
I	I	Feasibility of having only one Corporation for the exploration of Iron Ore in the public sector.
2	7	I would contribute to a substantial economy of ex- penditure and effort if integrated training schemes for all public undertakings dealing with a particular or allied industry are formulated and organised on a common basis.