E. C. No. 736

ESTIMATES COMMITTEE (1972-73)

(FIFTH LOK SABHA)

THIRTY-FOURTH REPORT

MINISTRY OF PETROLEUM AND CHEMICALS
(DEPARTMENT OF CHEMICALS)

PETROCHEMICALS

LOK SABHA SECRETARIAT
NEW DELHI

March, 1973/Phalguna, 1894 (Saka)

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CORRIGENDA

To

Thirty-fourth Report of the Estimates Committee of (Fifth Lok Sabha) on the Ministry of Petroleum and Chemicals - Petrochemicals.

Page	Para	Line	Correction
10	1.18	Table-line 4from below	Against "Caprolactam" in cl.6, For "20" read "20(-)"
14	1.23	20	After "so" omit "that".
39	2.25 (Heading)	-	For "imoprt" read "import".
47	2.34	Table-lines1-2.	In cl 1,Omit "Indian Oil Corporation"
54	3.8	1	For "projects" read "project"
64	3.34	18	For "anohar" read "another"
69	3.47	17	For "consultation."read "consultants"
	3.48	19	After "stated" insert "is"
70	-	4	For "Petro-hemial" read"Petrochemical"
71	3.51	4	For "difference" read "different"
74	4.7	10from below	For "Orgaic" read "Organic"
75	4.8	4	For "manufacturs"read "manufacturers"
		10	For "cornerd" read "cornered"
99	-3(from below)	under 'percentage'	For "615%" read"65%."
120	-	17	For "as" read "at"

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INTRODUCTION

I, the Chairman, Estimates Committee, having been authorised by the Committee to submit the Report on their behalf, present this Thirty-Fourth Report on the Ministry of Petroleum and Chemicals (Department of Chemicals)—Petrochemicals.

2. The Committee took evidence of the representatives of the Ministries of Petroleum and Chemicals (Department of Chemicals), Finance (Department of Expenditure and Department of Economic Affairs), Industrial Development (DGTD), Planning Commission, Indian Petrochemicals Corporation Limited and Engineers India Limited on the 1st and 2nd November, 1972. The Committee wish to express their thanks to the Officers of these Ministries etc. for placing before them the material and information which they desired in connection with the examination of the subject and for giving evidence before the Committee.

3. The Committee also wish to express their thanks to Dr. N. D. Desai of Messers Power Cables Limited, Bombay for furnishing Memorandum to the Committee and also for giving evidence and making valuable suggestions.

4. The Committee also wish to express their thanks to all the Associations and Bodies of Trade and Industry and individuals who furnished memoranda to the Committee.

5. The Report was considered and adopted by the Committee on the 12th March, 1973.

6. A statement showing the analysis of recommendations/conclusion contained in the Report is also appended to the Report (Appendix VIII).

NEW DELHI;
March 20, 1973
Phalguna 29, 1894 (*S*).

KAMAL NATH TEWARI,
Chairman,
Estimates Committee.

CHAPTER I

PLAN OBJECTIVES, ACHIEVEMENTS AND POLICY

A. General

Introductory

1.1. 'Petrochemicals' are normally understood as the chemicals which are generally derived from Petroleum raw materials. According to their end-products, petrochemicals are categorised into four broad groups; (i) Plastics, (ii) Synthetic Fibres, (iii) Synthetic Rubber, (iv) Organic Intermediates. The main attribute of petrochemicals, in so far as their industrial uses are concerned, is that they provide cheap substitutes, and in many cases of improved quality, in place of a variety of goods which have hitherto been obtained from conventional sources. The petrochemical industry, though of recent origine has made phenomenal progress in the industrialised countries of the world. This is on account of the fact that plastics have technological advantages over the traditional materials like metal, wood, glass, paper etc. due to properties such as light weight, toughness, better strength-to-weight ratio, greater ease in processing and reduction in the number of operations for turning out the finished product, lower cost of production resulting in reduction of end-product prices, etc. Similarly, synthetic fibres have properties unmatched by the traditional fibre material like wool, cotton, jute, etc., such as durability, abrasion resistance, crease resistance, ease in cleaning etc. The following statistics indicate the production of petrochemical product groups in some of the advanced countries and in India:

('000 tonnes)

	1965	1966	1967	1968	1969
		Plastics			
U.S.A. .	5300	6162	5734	6684	7279
U.K. . .	957	1017	1108	1256	1330
West Germany	1999	2293	2629	3256	3939
Italy	930	1078	1203	1425	1441
France . .	695	800	890	1008	1319
Japan . . .	1609	2004	2688	3496	4304
India	37	36	36	55	85

	1965	1966	1967	1968	1969
	Synthetic Fibers				
U.S.A. .	805	938	1059	1457	1580
U.K. .	148	175	194	268	291
West Germany	180	213	251	361	452
Italy . .	110	144	153	195	237
France .	87	109	109	132	157
Japan . .	379	460	578	685	797
India . .	3	4	6	10	14
	Synthetic Rubber				
U.S.A. . .	1842	2001	1942	2165	2286
U.K. .	175	194	203	237	273
West Germany	173	207	206	238	292
Italy	120	122	118	125	135
France .	148	164	189	223	275
Japan . .	161	233	281	381	526
India	14	16	22	25	25

It would be seen from the above data that the development in the field of petrochemicals, particularly plastics, has been remarkable in the economically advanced countries. An idea of the increase in the per capita consumption of plastics in respect of some of the developed countries can be had from the following statistics:

	1960 (Kg.)	1970 (Kg.)
Japan . .	15	55
U.S.A. . . .	13·7	39
West Germany .	15	40
France	7·4	30

The per capita consumption of Plastics in India has, however, increased from 0.09 in 1966 to 0.17 in 1970.

Earlier Examination by Committee

1.2. The subject of "petrochemicals" was taken up earlier by the Estimates Committee in 1967-68 and they had submitted their 48th Report (4th Lok Sabha) on this subject. The 65th Report (4th Lok Sabha) of the Estimates Committee (1968-69) indicates the action taken by the Government on the recommendations contained in the 48th Report. The Committee has taken up this subject this year again on account of the slow rate of progress observed by them in this field and also because the petrochemical processing industry being largely in the Small Scale Sector has a large employment potential.

B. Plan Provisions and Achievements

Plan provisions

1.3. The Fourth Five Year Plan lays down physical targets of capacity (in the case of Core Industries only) and production for the year 1973-74, i.e. last year of the Plan, in respect of a limited number of petrochemicals and petrochemical based products. The items included in the Core Sector are D.M.T., Caprolactam and Acrylonitrile which are Synthetic Fibre intermediates and Synthetic Rubber which is the secondary material derived from Butadiene and Butenes/Isobutylene. Among the non-core petrochemical industries for which targets of production are laid down in the Fourth Plan are the secondary plastic materials P.V.C., Polyethylene, Polystyrene and Polypropylene and the tertiary Synthetic Fibre materials e.g. Nylon, Polyester and Acrylic Staple Fibres and Filament and other Yarns. Plastics are not included in the list of Core Industries and the Plan targets of capacity and/or production by 1973-74 are set down only in regard to some petrochemicals which are only secondary and tertiary material while basic and primary petrochemical materials from which these are derived do not find a mention in the Plan at all. It is also noted that the organic petrochemical materials such as Methanol, Ethylene Glycol, 2-Ethyl Hexanol, Acetone, Phenol, Methyl Methacrylate, Detergent Alkylate and Phthalic Anhydride do not find any mention in the Plan despite their widespread use in the country. Some estimates of demand for 1973-74 in respect of these organic chemicals have been prepared by the Development Council for Organic Chemical Industries which are relied upon by the Government for the purpose of production planning.

1.4. It was pointed out to the representative of the Ministry of Petroleum and Chemicals during evidence that the Fourth Plan document laid down the targets of production by 1973-74 only in regard

to some petrochemicals which were secondary and tertiary materials and that basic and primary petrochemical matrials from which those were derived and other organic petrochemical materials did not find mention in the Plan document. He was asked as to why the development plan for petrochemical industries included in the Fourth Plan document was so sketchy and whether a comprehensive plan for petrochemicals was prepared and got approved for the Fourth Plan period. He was also asked as to how in the absence of properly planned targets of production, decisions were being taken on proposals from public and private sectors for setting up of new or additional capacities. The Additional Secretary, Ministry of Petroleum and Chemicals replied:

> "The plan document has specified the targets of production of the major synthetic fibre intermediaries which are Caprolactam, DMT and certain secondary and tertiary and products like Plastics, synthetic rubber etc. The plan document also specifically envisages the establishment of a petrochemicals complex in Gujarat consisting of an aromatics project and a naphtha cracker both in the public sector. Therefore, the targets for the important and products, some of them secondary and tertiary, were decided and indicated in the Plan in the light of the demands assessed for them. The requirements of primary and secondary materials in many cases had to be calculated back from these targets and only a financial provision was made in respect of the public sector units. As far as the Ministry was concerned, we felt that all the necessary materials for detailed planning and trying up of the projects was available to us and the execution of our projects was not affected on account of the fact that the Plan document did not go into greater detail into the petro-chemicals plan. Nor did we find any difficulty in pursuing the licensing of new projects in the private sector because along with these basic targets of secondary and tertiary raw materials and the indications we got from the Development Council, it was possible for us to determine how far and when we should licence new projects. In a multi-product sector like petro-chemicals, we find that the Plan document laid down adequate planning parameters for undertaking the overall production programme."

He however conceded that "it would be far more informative if we begin with primary and then go on to the secondary and tertiary (materials).

1.5. The representative of the Planning Commission further explained that the Fourth Plan was a brief document and "could not really cover all the very large number of petro-chemicals; only the very important items which are basic like fibres, rubber plastics and so on" were included in the Plan document. However, according to him—

> "Before the Fourth Plan was finalised we had the benefit of a very detailed exercise carried out by the Planning Group on petro-chemicals which was set up by the Ministry of Petroleum and Chemicals at the initiative of the Planning Commission. This group has gone into very considerable detail about the overall petrochemical programme, the requirements of the scheme, the investment requirements, the foreign exchange requirements, the raw material requirements and so on..... This document was submitted to the Planning Commission..... a year before the Plan was finalised..... There have been some marginal adjustments, but substantially the programme remains much the same."

Asked to state whether the Report of the Working Group was published for general information, he said:—

> "It has not so far been made public in the sense that it has not been printed and circulated.....I think that we ought to have made this public and publicised this, but unfortunately, there has been a lapse in regard to that, and we shall take your advice on this."

The representative of the Planning Commission further stated that "a very detailed programme was produced in the Planning Report" covering every unit having a certain investment level. Besides, feasibility reports were prepared in the Ministry of Petroleum and Chemicals, the Indian Petrochemical Corporation and other public sector organisations for the programmes to be taken up in the public sector. Feasibility reports were also prepared for large units having an investment of over Rs. 5 crores. He admitted that these were not published but said:

> "a considerable amount of this information was given to the Development Councils. Some of it was given to certain State Governments also where these units were to be located. In addition to this, Government invited applications

through press advertisements and press notes, about scheme that were to be licensed in the private sector.... In regard to process products of the Small Scale and medium scale industries, this information was made available to the National Small Industries Corporation."

Inclusion of Industries in Core Sector

1.6. The representative of the Ministry of Petroleum and Chemicals was during evidence asked to state as to the basis, on which certain petrochemical industries were selected for inclusion in the List of Core Industries and whether any review was made to see whether any other industry merited inclusion in the Core Sector. He replied that as far as petrochemicals were concerned, he felt that the list was sufficiently comprehensive because the main emphasis was on synthetic fibres for their import substitution effect and on synthetic rubber for the same reason. He, however, admitted that no review had been made to include other basic strategic and critical industries in the List of Core Industries. Answering another question he said that the review was made by the Ministry of Industrial Development though in the matter of petrochemicals, the Ministry of Petroleum and Chemical would, in the normal course, be consulted by that Ministry before taking a decision.

Detailed plans in respect of Core Industries

1.7. According to the Industrial Licensing Policy of 1970, detailed industry plans were required to be prepared in respect of the Core Industries for the Fourth Plan period keeping in view the projections for the Fifth Plan. Asked during evidence to state whether such detailed plans were prepared in respect of the petrochemical industries included in the Core Sector, the representative of the Ministry of Petroleum and Chemical stated:—

"The detailed plans for all the projects included in the Fourth Plan relating to Core Industries have been prepared and submitted to the Planning Commission."

Formulation of Fifth Plan

1.8. For the Fifth Plan, the representatives of the Planning Commission stated during evidence that a Steering Group on Chemicals and Allied Industries had been set up about three months ago. This

Steering Group had set up Task Forces. The Task Forces on synthetic fibres, petrochemicals and insecticides were, it was stated, presided over by the Additional Secretary, Ministry of Petroleum and Chemicals and included representatives of the major associations of private industries, the National Committee on Science and Technology, the D.G.T.D. and of the various other interests in the line. The Task Forces were expected to submit their report to the Steering Group in December, 1972 while the Steering Group itself was expected to submit its report to the Planning Commission by March, 1973. It was suggested that the reports of the Task Forces/Steering Groups should be published for general information as soon as these were submitted so that others could also offer their comments and that the Fifth Plan should be finalised on the basis of the reports of the Steering Groups as also the comments received thereon. The representative of the Planning Commission replied:—

> "These were meant as working documents for the Planning Commission, but if you suggest, we would certainly consider whether there are any problems involved in publicising this and if there are none, then we will make it a public document."

1.9. The representative of the Ministry of Petroleum and Chemicals had the following further suggestion to make in this connection:—

> "The Steering Group's report will be considered by the Planning Commission for inclusion in the draft Fifth Plan. At that stage when the draft Fifth Plan is ready, I think, it would be a good idea if the Ministries, sector-wise, could also produce their detailed draft plans and publicise them so that all processes of finalisation are in an atmosphere of informed discussions."

The representative of the Planning Commission accepted the suggestion and stated that the Commission "would invite other Ministries also to indicate in consultation with the Planing Commission as to what part of the central plan would be done in the public sector and what part would be in the private sector". In reply to another question, he assured that the Commission would "attempt to indicate as fully as possible the programme for the public sector, identify the projects and the outlay.....in relation to priorities..... resources.....and what is feasible within a five year period

.....It can be indicated as to how much will be the role of private sector after defining the total quantities, in terms of projects and allocations in the Fifth Plan."

1.10. The representatives of the Ministry of Petroleum and Chemicals also agreed to the suggestion made during evidence that at the beginning of the Five Year Plan, Government should be sure of the line on which industrial development was to take place, of the location where projects had to be set up and as to whether the project were to be in the public or private sector and in the letter case, whether the industry would be in the small scale, medium or large scale sectors.

1.11. Since purely from the point of view of space, it became difficult to deal with individual industries in very great detail in the main plan document itself, the representative of the Planning Commission suggested that some kind of a companion supplementary volume could be brought out dealing specifically with individual industries in some greater detail. He assured the Committee that the Planning Commission will "attempt to bring out various reports produced in the context of the Fifth Plan and give publicity to it and make those documents available freely."

1.12. The Committee are constrained to observe that the production in India of plastics, synthetic fibres and synthetic rubber, which are based on petrochemicals, is pitiably low. The rate of growth of production and consumption of petrochemical based goods in other countries suggests the importance being attached all the world over to this field of industrial activity. In India the importance of petrochemical was realised very late and until recently the petrochemical raw materials were being entirely imported. Even after the importance of petrochemical industry came to be appreciated, the development of the industry has not been as speedy as it should have been. The Committee stress that Government should take concerted steps to accelerate the development of this promising industry which can contribute significantly towards industrial growth and generation of employment opportunities.

1.13. The Committee regret that the Fourth Plan document failed to lay down the capacity and production targets for basic and primary petrochemicals while it provided for some intermediate and tertiary products. They are informed that the demand parameters for these materials were available to the Ministry of Petroleum and Chemicals and were kept in view while licensing industrial capacities during the Fourth Plan period. The Committee, however, feel

that firm targets for all the petrochemicals should have been laid down in the Plan document itself so that these were known to the people. The Committee recommend that in formulating the Fifth Plan, a detailed and systematic study should be made of the industry and physical and financial targets worked out for the primary, secondary and tertiary petrochemical materials. These should be included in the Plan document itself so that the public is aware of the broad features of the production plan for the Fifth Plan period.

1.14. The Committee note the assurance given by the representative of the Planning Commission that detailed studies made by the Planning Commission or its Committees/Study Groups on the basis of which the Fifth Plan targets and related provisions are made, would be considered for publication in the form of a compendium volume of the Fifth Plan document for information of public and hope that it would be implemented.

***1.15. The Committee note that the list of Core Industries in the field of petrochemicals is not sufficiently realistic. They feel that the Plastic intermediates, i.e. P.V.C., Polyethylene, Polystyrene and Polypropylene industries, and some of the organic petrochemicals are also of a basic nature as they produce raw material for a large number of processing units in the country. They, therefore, recommend that Government may examine the desirability of including these industries in the Core Sector so that they receive due priority in the matter of development.**

Relaxations in licensing policy announced in January, 1972.

1.16. The Government announced relaxation in licensing policy to secure fuller utilisation of installed capacity in 54 specified industries vide Ministry of Industrial Development's Press Notes dated 1st January, 1972 and 19th February, 1972. The petrochemical industries covered in the list published in January were the following:—

Fertilizer
Organic Chemicals
Synthetic Rubber
Man-made Fibres.

Subsequently, through a Press Note dated 3rd October, 1972, Government has extended the relaxation in licensing policy for fuller

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*At the stage of factual verification, Government have stated that the list of Core Industries has been revised *vide* the Ministry of Industrial Development Press Note dated 2nd February, 1973 to include *inter alia* Synthetic Resins and plastics and Synthetic Detergents.

utilisation of installed capacity to 11 other industries. This list includes the following petrochemical industries which belong to Thermoplastic Resins Group:

Polystyrene
Polythylene (Low Density and High Density)
P.V.C. Resins

1.17. The Committee do not quite understand why the industrial units producing Thermoplastic Resins had to wait for more than 9 months before the relaxation in licensing policy to secure fuller utilisation of installed capacity, announced by Government in January, 1972, was made applicable to them. The delay in taking the decision shows that either the Ministry of Petroleum and Chemicals were so long not aware of the gap between the demand and production of these petrochemicals so as to appreciate the urgency of augmenting production in that field or that they were doubtful of its economic importance. The Committee feel that perhaps the shortage of these resins being experienced this year would have been considerably less if the relaxations were made applicable to them earlier.

Achievements of Physical targets

1.18. The following statements indicate the targets of capacity and/or production in respect of petrochemicals set down for 1973-74 i.e. the last year of the Fourth Plan, either in the Plan document or the Mid Term Appraisal thereof or in the demand estimates said to have been prepared by the Development Council for Organic Chemical Industries and achievements upto 1971-72:

STATEMENT A

Statement showing the targets of Capacity and Production in respect of Petrochemicals in the core sector fixed for the Fourth Plan period and achievements

(In thousand tonnes)

	Capacity approved and installed at the beginning of the 4th Plan	Targets for 1973-74		Targets for 1973-74 as per Mid Term Appraisal		Capacity approved & installed at the end of 1971-72	Production	
		Capacity	Production	Capacity	Production		1968-69	1971-72
	1	2	3	4	5	6	7	8
D.M.T.	24(—)	23	20	23	18	24(—)	—	—
Caprolactam	20(—)	23	23	23	—	20	—	—
Acrylonitrile	..	16	16	—	—	24(—)	—	—
Synthetic Rubber	30(30)	70	70	30	36	50(30)	25·9	33

Note.—Figures in brackets show the capacity installed.

STATEMENT B

Statement showing production targets in respect of Petrochemicals (Non-Core) Fixed for the 4th Plan and achievements

(In Thousand tonnes)

	Production Target for 1973-74	Production Target for 1973-74 as per Mid-term Appraisal	Production 1968-69	Production 1971-72
	1	2	3	4
1. P.V.C.	90	80	23·4	42·9
2. Polythylene (LD'HD)	90	78	25·2	51·6
3. Polystyrene	30	25	9·5	11·8
4. Polypropylene	15	..	..	
5. Nylon filament, Nylon tyre cord and industrial yarn etc.	29	21	6·5	10·8
6. Polyester filament yarn & Polyester fibre	25	22	4·8	6·3
7. Acrylic fibre	12	..	..	0·1
8. 2-Ethyl Hexanol	..	23*	0·7	10·0
9. Ethylene Glycol	..	12*	0·9	3·8
10. Acetone	..	16*	4·5	12·0
11. Methanol	..	45*	16·3	23·3
12. Phenol	..	20*	2·99	9·9
13. Phthalic Anhydride	..	24*	2·4	6·0
14. Methyl Methacrylate	..	5*	..	..
15. Detergent Alkylate	..	12·5*	..	..

*These figures represent demand estimates prepared by the Development Council for Organic Chemical Industries.

1.19. These statements indicate the following position in regard to Synthetic Fibre Intermediates and Synthetic Rubber which are classified as Core Industries:

Synthetic Fibre Intermediates

D.M.T.—A capacity of 24.000 tonnes was already approved for the public sector at the beginning of the Fourth Plan. The Plan envisaged that the capacity would be installed during the Plan period and

set down the target of production for 1973-74 as 20,000 tonnes. On a review made in the Mid-Term Appraisal of the Plan in 1971-72, the production target for 1973-74 was reduced from 20,000 tonnes to 18,000 tonnes. Until the end of 1971-72, however, the capacity had not been installed.

Caprolactam: A capacity of 20,000 tonnes was already approved in the State Joint sector at the beginning of the Fourth Plan. The target of capacity as well as production set down for 1973-74 was 23,000 tonnes. As a result of the Mid-Term Appraisal of the Plan in 1971-72, the target of capacity for 1973-74 remained the same i.e. 23,000 tonnes but no production was envisaged during the Plan period. Until the end of 1971-72, the approved capacity of 20,000 tonnes had not been installed in the State Joint sector.

Acrylonitrile: The target of 16,000 tonnes of capacity as well as of production was set down for the year 1973-74. During 1971-72 a capacity of 24,000 tonnes was approved in the public sector but it had not been installed by the end of that year.

Synthetic Rubber: A capacity of 30,000 tonnes was already installed in the private sector at the beginning of the Fourth Plan period and in 1968-69 the production was 25,900 tonnes. The targets for capacity as well as production for the year 1973-74 were fixed at 70,000 tonnes. These were reduced in the Mid-Term Appraisal to 30,000 tonnes and 36,000 tonnes respectively. In the year 1971-72, an additional capacity of 20,000 tonnes was approved for the public sector which had, until the end of 1971-72, not been installed. The production in the private sector in 1971-72 was 33,000 tonnes.

1.20. The position in regard to other petrochemicals is as follows:—

Plastics Intermediates: The Fourth Plan set down a target for the production of plastic intermediates, namely P.V.C., Polyethylene, Polystyrene and Polypropylene, for the year 1973-74 as 2.25 lakh tonnes. This target was reduced in the Mid-Term Appraisal to 1.83 lakh tonnes. The Appraisal did not contemplate any production of Polypropylene while the original production target for this material was 15,000 tonnes. As against the production of 58,100 tonnes of P.V.C., Polyethylene and Polystyrene during 1968-69 and the considerably reduced production target of 1.83 lakh tonnes for 1973-74 tonnes, the production of these items achieved during 1971-72 was 1.06 lakh tonnes only.

Synthetic Fibers: The production target for 1973-74 set down in the Fourth Plan for Synthetic fibres, namely, nylon fibre, filament yarn, tyre cord and other industrial yarns, Polyester fibre and filament yarn and Acrylic fibre was 66,000 tonnes which was reduced in the Mid-Term Appraisal to 43,000 tonnes. The Appraisal did not envisage any production of Acrylic Fibre during the Fourth Plan period. As against the production of 11,300 tonnes of Synthetic fibres in 1968-69 and reduced production target of 43,000 tonnes for synthetic fibres for 1973-74, the production during 1971-72 was 17,200 tonnes.

Organic Chemicals: The Fourth Plan document or the Mid-Term Appraisal thereof did not cover the organic petrochemicals. The demand estimates for some of these, namely, 2-Ethyl Hexanol, Ethylene Glycol, Acetone, Methanol, Phenol, Phthalic Anhydride, Methyl Methacrylate and Detergent Alkylate, for 1973-74 are stated to have been assessed by the Development Council for Organic Chemical Industries which work out to a total of 1.58 lakh tonnes. The total production of these organic chemicals achieved by the end of 1971-72 was however, 59,000 tonnes only as against 27,700 tonnes during 1968-69.

1.21. The Committee are greatly disappointed to observe that the rate of growth of petrochemical industry in the Core Sector has been nil during the first three years of the Fourth Plan period. In respect of DMT, Caprolactam and Acrylonitrile, which are synthetic fibre intermediates, no capacity had been installed upto 1971-72 while the Plan originally envisaged sizeable production of these materials at the end of the Plan period. In the case of Synthetic Rubber, by 1971-72, even the approved capacity was much below the production target for 1973-74 and that too remained to be installed. The capacities for DMT, Acrylonitrile and Synthetic Rubber are licensed to Indian Petrochemical Corporation—a Public Sector Undertaking and are a part of the Gujarat Aromatic/Olefins Projects. The capacity for Caprolactam is licensed to Gujarat State Fertilizer Company—a Gujarat State Joint Sector Undertaking. The Committee have subsequently in Chapter III of this report commented upon the delay in the commissioning of these projects. Here, they would like to point out that on account of non-realisation of the production targets in respect of these industries, which produce raw material for the down stream units, the growth of processing industries, which being largely in the small scale sector are employment-intensive, has been stunted and the pressure on foreign exchange required for imports of raw material for feeding the existing down stream units is unnecessarily maintained.

1.22. The Committee also find that as a result of the mid-term appraisal of the progress of the Fourth Plan achieved upto 1971-72, the Planning Commission has scaled down the capacity and production targets for the Plan. The Committee are averse to the scaling down of the targets without the reasons therefor being fully explained. The Committee see no reason why the target in this field, vital to industrial growth and generation of employment potential, could not be achieved by integrated and detailed planning in advance and timely concerted measures in implementation thereof. While the Committee underline the need for laying down the plan targets on a more realistic basis, they consider that slow progress of the Plan should attract timely notice and, instead of resorting to the easy course of scaling down the targets, the implementation machinery should be geared up for redoubled effort to improve upon the past performance so as to achieve, in the remaining years of the Plan, the targets originally laid down.

1.23. The Committee desire that Government should make an intensified effort to achieve maximum progress in the development of the petrochemical industry during the remaining period of the Fourth Plan so that as to reach as nearly as possible the targets set down in the plan. For the Fifth Plan, the Committee trust, the targets of capacity and production would be laid down in detail preferably year-wise, keeping in view the vital importance of these materials for industrial growth and generation of employment opportunities.

Shortage of certain Petrochemicals

1.24. *Alcohol*: Government have admitted that the production of Alcohol, which is used for the manufacture of a number of organic chemicals, during the current year (1972-73) is likely to be short of the total requirements by 25 per cent. The reason given is that "while demand for alcohol, both for potable and industrial use has increased somewhat, the production of alcohol based on molasses has not increased correspondingly in the current sugar year. Two States which earlier were enforcing prohibition have now abandoned that policy, and in other States consumption of potable liquor has gradually increased. This has increased the draw on the available supply of alcohol." To meet the requirement of the 'most essential' industries in deficit States during the current year, Government propose to import 40,000 tonnes of Alcohol. Besides, Government have taken the following measures:

"In order to impress on the State Governments, the gravity

of the alcohol situation, the Ministry has advised them to enforce the most stringent austerity measures and to adopt the following priorities for the allotment of alcohol:—

(i) Priority industries for the manufacture of drugs, pharmaceutical, pesticides, synthetic rubber, acetic acid, thermo-plastics (which include polyethlene pine oil and shellac.

(ii) Science laboratories, hospitals and dispensaries.

(iii) Potable purposes.

(iv) Paints and varnishes.

The State Governments have been advised that the allotment for potable use should not be made at a higher level than that in the preceding year. They have also been advised that in future when they set up alcohol-based industries which come within the purview of the State Government, prior approval of the Central Government be taken so that there is no indiscriminate increase in new alcohol-based industries.

The alcohol availability position changes from week to week and in order to prevent any serious stoppage of production a constant watch is kept over the situation. The ways and means position of all major alcohol-based "industries is monitored and *ad hoc* allocations are made from one area to another in order to tide over local problems."

It is also stated that for the future, Government have a deliberate policy of not encouraging the setting up of new alcohol based chemical industries because there is no assured increased supply of alcohol to sustain these new industries.

1.25. *Thermoplastic Resins*: Another field in which shortages have been admitted are the Thermoplastic Resins. These are P.V.C. polyethylene (HD & LD), and polystyrene. The indigenous production of these items in the current year (1972-73) is likely to be 1.10 lakh tonnes only and the shortage is assessed as of 16,000 tonnes.

The main reason is stated to be:—

(i) A very large number of processing units—almost all in the small scale sector have come up which has resulted in the growth of demand much beyond that in the previous years which could not have been anticipated.

(ii) The shortage may not have come up if the indigenous production had been maintained at levels anticipated

earlier. However, due to problems regarding supply of ethylene, carbide and technical and operational difficulties experienced by manufacturers of H.D. Polyethylene (one unit) and P.V.C. (2 units) the production was lower than anticipated.

In order to alleviate the difficulties of the industries, Government have, it is held, taken the following steps under the Import Trade Control Policy:

(i) it has been decided from the licensing period April, 1972| March, 1973 to allow the imports of these items to the exporters.

(ii) import ban on P.V.C. and Polyethylene (H.D. & L.D.) has been removed in this licensing period and actual users (plastic processing units) mostly in the small scale and medium sectors are being allowed to obtain supplies of imported resins through State Trading Corporation.

In addition to the above steps, the Ministry, it is stated, keeps a close watch to ensure that the distribution of the existing raw material is as equitable as possible. Meetings are held with the manufacturers and the representatives of the users federations in order to assess the bottlenecks and find solutions. In the longer prespective the following measures are envisaged by Government in order to ensure that shortage of plastic raw materials does not persist:—

(a) The only HD Polyethylene unit in the country has been permitted to expand by 10,000 tonnes.

(b) Import of alcohol is being resorted to in order to ensure that the LD polyethylene unit and the PVC units can function at full capacity or even upto such higher levels as permissible under the Government industrial licensing policy.

1.26. The Committee consider that the long term remedy for shortage of industrial Alcohol does not lie in discouraging the setting up of petrochemical units based on Alcohol but in finding ways and means for increasing the availability of Alcohol for industrial purposes. They regret that the Ministry of Petroleum and Chemicals, which is responsible also for molasses, did not take adequate measures in time to increase the availability of molasses for the production of industrial alcohol. They feel that if proper attention had been paid to the pricing and storage of this Commodity, and a statu-

tory allocation made for the production of industrial alcohol, it would have gone along way in meeting the demand for the production of industrial Alcohol.

1.27. The Committee would also like to reiterate in this connection the recommendations made by them earlier in Paragraphs 1.75 and 1.76 of their 27th Report (5th Lok Sabha)on Sugar and Vanaspati that the price of molasses used for the production of industrial alcohol should be controlled and that the control of molasses should be transferred from the Ministry of Petroleum and Chemicals to the Ministry of Agriculture (Department of Food).

1.28. As regards the shortage of Thermoplastic Resins, which are being used as raw material by a large number of industrial units mostly in the Small Scale Sector, the Committee feel that the situation could have been avoided by a more realistic projection of demand and timely action to meet the impending gap between demand and availability. They recommended that Government should take energetic steps to increase the production of Thermoplastic Resins by speeding up the implementation of the existing licenses issued or, if necessary, by licensing more capacity.

C. Licensing Policy for Petrochemicals

Licensing of Private Units

1.29. It was represented to the Committee that the main reason for the progress in the development of petrochemicals being slow was the halting and indecisive policy of the Government in regard to licensing of private units in the field of petrochemicals. As an illustration, it was pointed out that while Government had in 1969 issued letters of intent to a few private parties for setting up certain down stream units in the petrochemical industry based on the Naphtha Cracker being set up in the public sector in Gujarat, almost simultaneously a blue print was prepared for setting up the down stream units in the public sector. As soon as the time limit of 6 months for submission of proposals for foreign collaboration expired, the Government took a decision to have the down stream units in the public sector. This according to the representation, demoralised private industry and rendered infructuous expenditure of time and energy involved in working out the Projects and entering into negotiations with foreign collaborators, besides causing uncertainty in regard to Govt.'s policy. Government was therefore asked to state their policy regarding licensing of private units in the petrochemical field.

1.30. Government have in a written reply explained their policy in this regard as follows:

"The Industrial Policy Resolution of 1956 classified industries into 3 categories. Organic chemical industries in which category petro-chemicals fall were included in Schedule 'B' to the Resolution. This Schedule consists of industries "which will be progressively State-owned and in which the State will, therefore, generally take the initiative in establishing new undertakings, but in which, private enterprise will also be expected to supplement the effort of the State". The state would increasingly establish new undertakings in these industries while at the same time, private enterprise would have the opportunity to develop in this field, either on its own or with State participation.

The Indusrtial Licensing policy at present in force was announced by the Government of India (under a Notification issued) in February, 1970.....Schedule III to this Notification contains a list of industries in 'Core Sector'. This list was subsequently revised in February, 1971. The industries included in the 'Core Sector' are basic, critical and strategic industries. Here, licensing would be used as a positive instrument for development and achievement of the detailed production plans drawn up for each of these items. The Larger Industrial Houses and foreign companies are expected to participate in and contribute to the development of industries in the 'Core Sector' and Heavy Investment Sector. Integrated petrochemicals complexes, DMT, Capralactam, Acrylonitrile and synthetic rubber are included in 'Core Sector'. According to a guideline issued by the Government for considering the applications for industrial licence where public sector may not be able to take up any of the core industries during the Fourth Plan period, applications giving the broad requirements of capacity in each case should be invited.

Petrochemical manufacture is highly capital intensive, involving rapidly changing sophisticated know-how, which has necessarily to be backed up by continuing research and pilot plant studies, scientific and technical personnel trained in production and application technology and dynamic marketing. The manufacturing schemes in the field of petrochemicals call for a major investment in the erections

of basic units—olefin plants—around which there has to be a complex of other plants to convert the 'building blocks' produced into resins, detergents, fibre intermediates, etc. Significant economies in the erection and operation of plants are possible by integrating off site services and exchange of foodstocks between the many component units in a complex; further substantial economies can be achieved by integrating a refinery, ammonia plant, and petrochemical manufacturing schemes in the new sites to be developed. The role of the public and private sectors in the development of petro-chemical industries is being determined in the context of the above-mentioned economic and technical considerations. Both public and private sectors have a role to play in implementing petrochemical projects to meet the targets. In the selection of private entrepreneurs for licensing of petro-chemical projects, basic factors taken into account are their ability to implement individual units in a technologically competent manner and in coordination with others so that viability of the complex of plants in their totality is not jeopardised. Thus the technological and managerial expertise as also the ability to raise adequate finances in time are critical considerations which have to be kept in view. The public sector's role in the field of petro-chemicals was specially studied in 1964 and thereafter in 1970 and areas for its development delineated.

The actual processing of applications for grant of licences for petrochemical projects from the private sector is usually done by an inter-Ministerial group to determine their suitability or otherwise from various relevant angles and then submitted to the Licensing Committee and other channels, wherever applicable, *viz.*, Committee of Economic Secretaries, Cabinet Committee on Economic Coordination.

It will be seen from the foregoing that consistent with the basic Government policy to expand the role of public sector, especially in critical and important areas of economic development of the country and with the vital needs of integrated petro-chemical complexes, the private sector has been and is being encouraged to contribute its due and appropriate share in the establishment of petrochemical units, particularly units for processing of primary and intermediate raw materials into finished products."

1.31. During evidence, the representative of the Ministry of Petroleum and Chemicals was specially asked to state whether any decision had been taken by Government on the issue whether in future petrochemical industry would be developed in the public sector exclusively or private sector would also be allowed to participate in its development either at secondary or tertiary stage. He replied:

> "About the petro-chemical industries or petro-chemical complexes being in the Public Sector, there is no such firm decision of Government that this will be in the Public Sector or will be allowed in the Private Sector. In the Fourth Plan one Petro-Chemical Complex was sanctioned. There were others mentioned but they were not sanctioned. As it progressed, in the beginning it was felt that the downstream units may be in the Private Sector. Then in stages decisions were taken to include the downstream units also in the public sector in the interest of integrated completion of the project and to derive the fullest benefits of integrated complexes of this kind. But this does not imply that there is a policy decision as such that petrochemical complexes or certain downstream units will be in the Public Sector."

Referring to the decision taken in 1970 to have the down stream petrochemical units based on the Olefins Project Gujarat in the public sector as a result of which the existing letters of intents issued to private parties were not revalidated and allowed to lapse, he added:

> "In view of the very special nature of this project, at the highest level it was decided that these down-stream units should be undertaken in the public sector as soon as possible and if it was found to be impracticable for want of resources, it should be undertaken in the joint sector. However, this decision did not cover the second polyethylene project in the complex for which a letter of intent had been granted to Arvind Mills and who had fulfilled the condition stipulated in the letter of intent within the specified time. Other persons who held letters of intent did not satisfactorily fulfil the conditions. The other letters of intent were allowed to lapse and were not renewed."

1.32. Subsequently, the Ministry was asked to indicate the result of the studies made in 1964 and 1970 for defining the role of public

sector in the field of petrochemicals. In reply the following note was furnished to the Committee.

"In November, 1964, a Working Group was constituted by the Department of Chemicals under the Chairmanship of the then Secretary (Department of Chemicals) to suggest realistic targets for the main petrochemical items by the end of the Fourth Plan and outlay in this sector. The Working Group was composed of representatives of the D.G.T.D., the Ministry of Finance, Planning Commission, Oil and Natural Gas Commission and the Indian Institute of Petroleum and others. This working Group, *inter alia*, studied the role of the public sector in the field of petrochemicals. An extract from the Report of this Working Group is attached for reference (See Appendix I). It will be seen therefrom that the basic considerations which should determine the extent of role of public sector in the development of petrochemical industry in India were spelt out by the Working Group.

In 1967, the Government decided that an Aromatics Projects should be set up in the public sector. Government also decided in principle the setting up of a Naphtha Cracker in the public sector. Its downstream units were to be put up by the private sector.

Subsequent to the above decision to set up the Naphtha Cracker in principal, all entrepreneurs, who had indicated interest in downstream units were contacted and asked to submit detailed proposals—particularly realistic estimates of project cost, sources of rupee and foreign exchange funds, process license fees, royalties, engineering fees, extent of foreign equity investment envisaged, if any, etc. (Such information is generally submitted by entrepreneurs after the issue of letters of intent but in view of the need to coordinate the implementation of all projects in a viable integrated complex, it was considered essential to obtain this information to establish that the individual plants in the complex would find acceptance by Government and be implemented as required. Apart from information supplied by the Ministry in a number of meetings and discussions with entrepreneurs, the assistance of the Gujarat Industries Department and the Gujarat Industrial Development Corporation was also availed of in advising entrepreneurs

of projects to be firmed up and what information was required. Clarifications and assistance were given to entrepreneurs who indicated even preliminary interest so that proper proposals could be formulated by them for evaluation. DGTD's comments were sought on the proposals which were received thereafter, and these were scrutinised in an Inter-Ministerial meeting which included representatives of D.G.T.D., Planning Commission and the Gujarat Government. Finally letters of intent were granted in the period between July—September, 1969 to the following parties:—

* * * * *

All these letters of intent were valid for 6 months and had the further stipulation that there would be no substantial change in the major factors pertaining to the project. The entrepreneurs were advised more than once both verbally and in writing that in view of the details worked out as requested by the Ministry and submitted by them in advance of the issue of letters of intent to them and technological and economic imperatives of an integrated complex, it would not be possible to consider extension of the validity periods of their letters of intent.

A decision was also taken in September, 1969 and November, 1969 to set up in the public sector the acrylonitrile and synthetic rubber plants respectively.

In discussion with the Planning Commission in December, 1969 on the Fourth Plan outlays for the Public Sector, it was agreed that since the Olefins Project was an integrated one (and, therefore, could not proceed without all the individual plants proceeding together), it would be necessary to have a contingency plan and provide funds for this, which would have to come into force if any of the projects was not able to make satisfactory progress. Such a plan was prepared by this Ministry in January, 1970 and discussed in Inter-Ministrial meetings comprising representatives of the Ministry of Industrial Development and Internal Trade, D.G.T.D., Ministry of Finance (Department of Economic Affairs) and Planning Commission in February, April and July, 1970. The Inter-Ministerial Committee thoroughly reviewed the progress made by each of the above holders of the letters of intent in the context of the

stipulations laid down in the letters of intent and also took into account the new licence policy, the policy in respect to inter-corporate investments under the Companies Act and the implications of the Monopolies and Restrictive Trade Practices Act. In the light of the discussions, three alternative proposals were drawn up as follows:—

(a) Continuing the implementation of these projects by the private entrepreneurs to whom the letters of intent had been issued (although the letters of intent had expired).

(b) Setting up of downstream units in the public sector.

(c) Taking up of these units in the joint sector.

These alternative were reviewed in August, 1970 in a meeting held in the room of Secretary Industrial Development and Internal Trade, attended by the representative of the Ministry of Finance (Department of Banking and Department of Economic Affairs), Planning Commission, Department of Company Affairs and the Ministry of Petroleum and Chemicals. The recommendations of this meeting were submitted by the Ministry of Petroleum and Chemicals and were considered by Government at the highest level at which it was decided that the first preference should be given to these projects being included in the public sector."

1.33. It is observed from the above notes that while letters of intent for setting up downstream units based on the Naphtha Cracker being put up in the public sector in Gujarat were issued to certain private parties between July—September, 1969 valid for a period of six months, a decision was taken in December, 1969 to prepare a 'contingency plan' for setting up the downstream units in the public sector and for the provision of funds therefor. Such a plan was actually prepared by the Ministry of Petroleum and Chemicals in January, 1970 and after consideration lasting between February—August, 1970, it was finally decided by Government in December, 1970 to include these down-stream projects in the public sector. Government maintain that the contingency plan was put into effect as the parties who were issued letters of intent had not submitted satisfactory foreign collaboration proposals within the specified time and the setting up of the down-stream units had to be synchronised with the commissioning of the Naphtha Cracker.

1.34. In a memorandum submitted by one of the affected parties at the time of examination of the subject of Industrial Licensing in 1971-72, the party had however, represented that they could not finalise the foreign collaboration within the specified time because of the relunctance on the part of the Ministry of Petroleum and Chemicals to indicate the line of foreign credits available to the party and also because the Ministry was unable to indicate to the party whether the raw material would be available to the party from the Naphtha Cracker in adequate quantity.

1.35. The Committee have, while examining the progress of the Gujarat Olefins Project in a subsequent paragraph, commented upon the shift in the policy of the Government in regard to the setting up of the down-stream units which was partly responsible for the delay in the commissioning of the Naphtha Cracker on which the development of the petrochemical industry largely depends.

1.36. The Committee are aware of the general uncertainty in regard to the role of the public/private sector that has persisted in the Fourth Plan, in the petrochemical field and they feel that it has arisen precisely because, as admitted by the representative of the Government before them during evidence, Government had not taken a "firm" decision as to whether the petrochemical industry would be in the public or private sector and the decisions taken in this regard have been on ad hoc basis. The Committee recommend that Government should clearly state the role of the Public Sector in the development of petrochemical industry during the Fifth Plan period keeping in view the overall plan targets to be achieved, the financial resources available for investment in the public sector in terms of plan priorities, technological resources, and feasibility of implementation of the programme in the public sector during the plan period. Government should also precisely define the areas in the field of petro-chemicals where the participation of the private sector would be permissible during the Fifth Plan period and publicise the same for general information so as to attract competitive proposals for the development of the industry in the shortest time.

CHAPTER II

LICENSING OF INDUSTRIAL UNITS AND PRODUCTION

A. Industrial Licensing Procedure

Licensing of Capacities

2.1. In the preliminary material furnished to the Committee the Ministry of Petroleum and Chemicals had, while describing the procedure followed for considering applications for industrial licences, *inter alia* stated. "The actual processing of applications for grant of licences for petrochemical projects from the private sector is usually done by an inter-ministerial group to determines their suitability or otherwise from various relevant angles and then (cases are) submitted to the Licensing Committee and other channels....." During evidence, the representative of the Ministry of Petroleum and Chemicals was asked to describe the procedure in detail, giving the composition of the inter-Ministerial Group. He replied:

> "....the applicants send their applications in the prescribed form for a licence—application which is sufficiently detailed. If we find on receipt of the application that there are some queries to be made, we make those queries and we try to see that the queries are made in one instalment only and not repetitive queries. Then both the D.G.T.D. and the Ministry, if necessary, send for the applicant to clarify certain matters, *i.e.* the process he is going to use, the know-how which he wishes to import, the equipment that is available in the country, the equipment that he will import and so on. All these angles are taken into consideration...
>
> The question of setting up inter-Ministerial groups to decide the suitability or otherwise, either of parties or processes or product mix, arises largely in cases in which there are many applications for a single item and in certain cases in which technical questions are raised which cannot be sorted out by the Ministry itself. In recent months we have had such groups created for certain items. In these meetings representatives are invited from the Ministries and Departments who would be concerned with the issues involved in a particular case. The representatives of DGTD, Planning Commission, Ministry of Industrial Development and Department of Company Affairs are generally associated

with such groups. Other Ministries or Departments are invited whenever required. The procedure is that such a group submits its report, the administrative Ministry considers it and then makes its recommendation to the Licensing Committee."

B. Licensing Delays

Licence Applications Pending.

2.2. The Estimates Committee (1971-72) had, in their 19th Report (5th Lok Sabha) on Industrial Licensing, observed that a large number of applications for industrial licences were pending with the Ministry of Petroleum and Chemicals for long periods. According to the figures made available to this Committee, as on 31-5-1972, as many as 111 applications for industrial licences were pending with the Ministry of Petroleum and Chemicals. Their break-up according to the period of pendency has been indicated as follows:—

Between 2—3 years	4
Between 1—2 years	68
Between 6 months—1 year	27
Between 3—6 months	6
Less than 3 months.	6
	111

2.3. During evidence, the Committee were informed of the latest position regarding the pendency of licence applications which, as on 31-10-1972, was 138 applications pending, out of which 83 were more than one year old, 17 were pending for between 6 months and one year while 38 were less than 6 months old. The applications pending for more than one year included 43 for polyester film on which decision was then said to be "imminent".

Reasons for delay

2.4. The representative of the Ministry of Petroleum and Chemicals explained during evidence the special circumstances on account of which industrial licence cases pertaining to his Ministry took a longer time for disposal. According to him:

"....many of the industries depend on imported raw materials; their process is also complicated. Sometimes different feed

stocks can be used. Foreign technology import is involved. It does take time in consultation, in consideration and so on. Then we face another peculiar factor because of the newness of the petro chemical industry and certain scarcity values attached to its products. These are high profit industries or had been high profit industries in the past and the pressure on licensing has been very great. For a single item yau can get something like 40 to 120 applications and it becomes necessary to process all the applications together so that a comprehensive view can be taken....We had an instance when we had virtually finalised our views about certain technology and certain recommendation for licensing. One of the parties claimed that it had developed its know-how and therefore, it was not necessary to import know-how. Once a responsible private party claims that it has its know-how we have to make sure that know-how is not unnecessarily imported. In that particular case we had to assemble a technical team. In fact we had to go out of the way and get outside expert, not from Government but non-Government expert, associate him with us and get a report. After that this Committee had gone and visited the plant, inspected the process, inspected the material and this took about five or six months. At the end of six months we were told that the process had not been developed to the proper standard of finished product. We allowed six months for this thing to be judged. We form inter-ministerial group to resolve the difficult cases so that we import the proper technology. We secure the proper product mix. We base the industry on proper raw material which in course of time will become available in India or which we cannot do without."

2.5. In reply to a question during evidence, the witness stated that where the number of applications for the issue of industrial licence for the same product was large, the selection out of them for the purpose of issue of the licences was made after on inter-Ministerial Group had processed all the applications and analysed all the material available, which naturally took a longer time.

2.6. As for the adherence to the time limit of three weeks laid down for technical processing of a licence case by the DGTD, the representative of DGTD stated during evidence:

"This is exactly being followed by all the directorates including

the petro-chemical directorate, and a closed check is being kept by the DGTD and the industrial advisers.... Wherever there is any cause for delay, these are explained to the Minister himself through the DG. Whatever has been stated by the Ministry of Industrial Development is being followed. It does not mean that there may not be a single case of delay beyond 21 days, because this number of 21 days is arbitrary. There are certain complex cases where the correspondence with the parties takes more than a month and a half, and sometimes the parties themselves ask for more time. We explain the position and try our best to expedite it within the time schedule."

2.7. In reply to a question as to how far the delays in the disposal of licensing cases were due to the licensing policy in the field of petrochemical industries being not clear, the representative of the Ministry of Petroleum and Chemicals stated:

"This is a very wide question which I think the Planning Commission could satisfactorily answer. But, as you know, the country is planning on the basis of certain indications of resource availability. It has seldom been true in the last four Plans that the resource availability has matched the Plan. Therefore, from time to time, stresses and strains are bound to appear in the availability of resources, foreign exchange, raw materials and feed-stocks and so on. From time to time, new ideas will be injected into the system. For example, this idea that technology should be purchased centrally is there. On the face of it, the idea appears very attractive, that we will pay much less if we do that, but on a fuller examination it was found that it was not workable. At the same time, this idea cannot be thrown away. So, I do appreciate and I would in fact agree when you suggest that proper thinking and proper training will expedite implementation. But, at the same time, these instances of discordance will not always be avoided... We have licensed 13 nylon plants, all of a smaller size. Here, we have advised one of our public sector undertakings—Engineers India Ltd.—to see if they can purchase the technologies centrally, do the engineering for all the plants in the country, and thus save money. This is one field in which the central purchase of technology would seem to be indicated. We are working on that."

Technical Examination in Ministry

2.8. Since the main reason for delay in disposal of licensing cases relating to petro-chemical industry in his Ministry was, according to the witness, a thorough technical appraisal of cases in the Ministry of Petroleum and Chemicals itself, the witness was asked as to why the technical examination of the case was duplicated in the Ministry when D.G.T.D., as the principal technical advisory body to the Central Government, was as a matter of course called upon to give its technical opinion in all licensing cases. The Adviser, Planning Commission, who was formerly in the Ministry of Petroleum and Chemicals stated:

> "....the main function of the technical cells in the Ministry, at least in the Ministry of Petroleum and Chemicals, is really the public sector. 80 percent of its time is devoted to that....In the case of private enterprise also, their advice is sought if that is connected up with an integrated complex. The primary responsibility of evaluation and offering comments on the proposals in the private sector is that of DGTD."

2.9. The representative of the Ministry of Petroleum and Chemicals submitted:—

> "DGTD are technical advisers to the Government of India as a whole. They maintain various demand projections. They have also figures of imports of that particular product and they are able to assess the technological worth of the proposal as a whole. DGTD serve all the Ministries....there is a great deal of merit in centralising the technical services available to the various Ministries. That is the only correct way for maintaining data, which can be classified, which can be computerised and the technical services can then be streamlined and norms can be maintained for all the Ministries. I do not think, the Ministries can possibly be made self-sufficient in this particular field. The Ministries will need advisers in various fields for various projects, but the technical services being provided by the DGTD are, in my humble opinion, best left centralised. There may be need for streamlining them; otherwise there will be differential evaluation of various technical proposals."

In reply to another question he admitted:

> "We do not have preliminary examination in our Technical Wing. We wait for the comments of the DGTD and then if, during the course of the examination, we have special difficulty or we want special advice, we also consult our Technical Advisers."

2.10. The representative of the D.G.T.D. submitted that his organisation was fully equipped and well-knit for a technical appraisal of petro-chemical cases.

Procedure for keeping a watch on progress of Licensing cases

2.11. The Ministry was asked to state whether they had any system of keeping a watch on the progress of licensing cases so as to see that those were not held up unnecessarily at any stage. In a written note furnished to the Committee it is stated:

> "The Section dealing with Petro-chemical industries puts up a weeqly Arrear Statement which gives *data* on matters pending for different periods. This statement is closely watched by the officers and instructions are issued as to the disposal of the long pending items. The officers are intimately in touch with the progress of cases, as well as the reasons for hold up. The progress of disposal of pending applications is also periodically intimated to the Ministry of Industrial Development after it is seen and reviewed by the senior officers. All this helps to keep a close watch on progress of licence applications."

2.12. The Committee are unhappy to note that, as on 31st October, 1972, out of 139 licence applications pending with the Ministry of Petroleum and Chemicals, as many as 83 were more than one year old. The plea that consideration of applications for licensing of Industrial Units in the Petro-chemical field takes a longer time in the Ministry of Petroleum and Chemicals because of some special considerations, namely, selection of proper process, availability of raw material and larger number of applications, is not convincing. The selection of proper process and availability of raw material are normal considerations on which all licences are issued while it is not only in the petro-chemical field that the number of licence application are large. The Committee have a feeling that the main cause for delays in processing of licensing applications by the Ministry of Petroleum and Chemicals, apart from the dilatory procedures,

is that the Ministry is involving itself rather too much in the technical appraisal of the cases, which is really the function of the D.G.T.D.

2.13. The Committee are greatly concerned that in the field of petro-chemicals, where there has been phenomenal technological development elsewhere, the mere process of examining the licensing applications and bringing them up before the Licensing Committee should have been subjected to such excessive and persistent delays. The Committee would like to point out that, as admitted in the course of evidence, DGTD which is the technical wing of the Government, has the requisite expertise in the field of petro-chemicals and that the Licensing Committee itself has representatives from all the Ministries/Departments and the other bodies concerned with the issue of industrial licences. The Committee, therefore, feel that the entire procedure adopted for processing of applications in the Ministry of Petroleum and Chemicals needs to be reviewed at the highest level to avoid duplication and to lay down realistic time schedules, so that all the processes involved in the issue of industrial licences are completed in the shortest time, contributing to industrial growth and generation of employment opportunity. The Committee would also like Government to lay down at the highest level, clear guidelines regarding allocation of the units in the public or private sector, size of the units, their location etc., so as to facilitate the work of processing of applications for the issue of licences.

2.14. The delays in the disposal of licence cases in the Ministry of Petroleum and Chemicals also show that the existing system of keeping a watch on the progress of cases is not adequate. The system should be improved upon with a view to make it really effective.

Delays in approval of proposals for foreign collaboration and import of Capital Goods

2.15. Government have in July, 1972 furnished to the Committee a list of Petro-chemical projects which have been approved by them or for which letters of intent have been issued, but which are yet to be licensed (Appendix II). From that it will be seen that considerable time is being taken by that Ministry in approval of foreign collaboratiaon proposals from private parties who have been earlier

issued letters of intent for setting up new or additional industrial capacities. A few cases are mentioned below as illustration:

	Party	Items of manufacture	L/I issued in	Industrial licence issued in
1.	Sriram Vinyl & Chemicals.	P.V.C. Resins (S.E.)	June, 1965	Licence not yet issued.
2.	National Rayon Corp.	Nylon Tyre Cord/ Industrial Yarn (NU)	Nov. 1966	Licence not yet issued.
3.	Ahmedabad Mfg. & Calico Prtg.	Polyester Staple Fibre (NU)	Dec., 1966	Oct., 1970
4.	Chemical & Plastics, Mettur.	P.V.C. Resins (SE)	Dec. 1966	Jan., 1970.
5.	Chemicals & Fibres, Bombay.	Polyester Staple Fibre (SE)	1968	Feb., 1972.
6.	Indian Organic Chemicals, Madras.	Polyester Staple Fibre (NU)	Oct. 1968	April, 1970.
7.	Mysore Petro-Chemicals.	Phthalic Anhydride (NU)	June 1970	Licence still not issued.

2.16. Asked to state the reasons for such abnormal delays, the Ministry of Petroleum and Chemicals have furnished the following note:

"The initial validity period of a letter of intent is usually 6 months for submission of foreign collaboration proposals and 6 months after the approval of foreign collaboration for submission of the capital goods applications, subject to the condition that the letter of intent is converted into an industrial licence within a period of one year. The period of one year for conversion of a letter of intent into an industrial licence does not necessarily represent what Government thinks would be a reasonable time for a party to fulfil the conditions of the letter of intent. This period of one year has been prescribed on a uniform basis for all industries, irrespective of the gestation period. However, this period of one year is not enough in every case to take the necessary steps stipulated in the letter of intent for petro-chemical industries. Most of the petro-chemical units require negotiation of foreign collaboration for sophisticated technology. The equipment to be imported is also sophisticated and has to

be located from several sources. The Government accepts the position that on account of the complexity of these units, extension to the validity of the letters of intent will have to be granted for varying periods after careful scrutiny of the circumstances of the cases. Further, it has been the experience that in a very large number of cases the firming up of the required foreign credit takes a long time. At the end of this validity period when the party applies for extension, Government assesses the progress made and takes a decision as to whether the party has shown enough initiative to warrant the extension of the letter of intent. In this sense, there is an advantage in having a limited validity of the letter of intent, even though we realise that a longer time would be taken to process the various aspects of the project. This enables Government to exercise discretion to cancel a letter of intent in a case where insufficient progress has been made. Out of the list of letters of intent given in reply to item No. 5(iii) of the Estimates Committee Questionnaire, there are a total of 9 cases where the letters of intent have remained unconverted into an industrial licence for a period of over one year. Out of this, in 7 of them the age of the letter of intent is less than 3 years and this is not an unusually long period for projects of this complexity. Two of them Sriram Vinyl Industries and National Rayon Corporation, have taken abnormally long time in conversion of their letter of intent into industrial licences because of certain special circumstances."

2.17. Details of these two cases has been given as under:

"*Sriram Vinyl Industries*:

At present the party is licensed for manufacture of 40 tonnes per day (equivalent to 13,200 tonnes/annum) of PVC. This capacity is in production. On 25-6-65 the party were given letter of intent to expand to the level of 20,000 tonnes/annum, on the basis of naphtha as a feedstock. The party submitted proposal for purchase of technology and engineering design from overseas in 1966. In view of the fact that the proposed expansion of M/s. Calico was also under consideration, the Govt. thought it fit to examine whether the technology could be negotiated on a centralised basis. This matter had therefore to be investigated and based on the results, Government decided not to pursue this and towards the latter half of 1969 Sriram Vinyl Industries were advised to re-negotiate their

foreign collaboration, as the terms of the earlier collaboration were no longer valid. In April, 1970, the party submitted revised collaboration proposals. At that stage, a review of the naphtha availability position showed that no quantity would be available for further fertilizer and chemical projects. Moreover the corresponding size of naphtha cracker is extremely small and in consultation with PVC manufacturers, the Ministry is investigating the economics of a large vinyl chloride plant which could supply vinyl chloride to all PVC manufacturers to enable them to increase their production at the lowest investment and operating costs. This will also assist in minimising foreign exchange expenditure on royalties, payment for overseas technology etc. and also produce valuable by-products.

M|s. National Rayon Corporation

A letter of intent was issued to the party on 30-11-66 for manufacture of 1800 tonnes of nylon tyre cord. The other two parties issued letters of intent for this item simultaneously were M|s. Ahmedabad Mfg. & Calico Ptg. Co. and M|s. Delhi Cloth Mills. These letters of intent were subject to the special condition that there would be no foreign technical collaboration for this scheme and that the party would utilise the technical know-how already developed within the country. This condition was placed in the context of the claim made by M/s. J. K. Synthetics and M/s. Nirlon Synthetic Fibres and Chemicals that they had developed satisfactory domestic technology.

After receipt of the letters of intent, the three parties represented against the condition regarding use of domestic technology on the ground that this was still not available. The claim was examined in the Government and in August 1967, it was decided that the claim of proven indigenous technology was premature.

At that time the demand for Nylon Tyre Cord was reviewed in the context of certain representations received from Rayon Tyre Cord manufacturers who claimed that more than sufficient capacity for rayon tyre cord had been installed and if nylon tyre cord was approved for manufacture, the capacity for rayon tyre cord became infructuous. The matter was studied by the Govt. and the Ministry was advised to hold up further action on the cases of nylon tyre cord which were under implementation. The entire position was reviewed and in June, 1969, it was decided that additional capacity to the extent of 4,000 tonnes/year could be considered. In the light of this, the Licensing Committee at its meeting held on 23-6-69

decided that National Rayon Corporation and Delhi Cloth and General Mills be cleared for altered capacities and that the condition regarding the compulsory use of domestic technology be deleted. The capacity, which was decided upon for M/s. National Rayon Corporation, was 2200 tonnes/annum. Pursuant to this, an amended letter of intent was issued to the party for the revised capacity on 18-7-69. This had a validity period of six months from the date of issue. On 30-1-1970, the party submitted to Government its terms of foreign collaboration. These were considered by the Foreign Investment Board at its meeting held on 7-5-1970, where, in principle, the terms of foreign collaboration were agreed to but the party was directed to associate an Indian consultancy firm as prime consultants, and thereby bringing down the foreign exchange expenditure. Thereafter, the party renegotiated with their collaborators thereby bringing down the incidence of foreign exchange outgo for foreign consultancy services. The revised terms were considered and approved by the Foreign Investment Board at its meeting on 9-12-70. The party then submitted their capital goods application in terms of the technology cleared. This was considered by the C.G. Committee at its meeting on 3-5-71 and the bulk of it was cleared. At this time, the M.R.T.P. Regulations had come into force and the question of conversion of the letter of intent into industrial licence had to be necessarily examined in the light of the provisions of this Act. After careful consideration of the matter, the letter of intent was converted into an industrial licence on 22-7-72.

From the above history of the case, it will be seen that one major reason for the long gestation period of this project has been the period approximately 31 months which was spent on deciding the claim of indigenous technology as well as the representations of the rayon tyre cord manufacturers. Considering the foreign exchange situaion in the country, Government could not afford to overlook the claim for indigenous technology. However, since rayon tyre cord capacity had been implemented at a great cost, when doubts were expressed as to the need for setting up of nylon tyre cord capacity Government had to assure itself that these doubts were unfounded and there was as essential demand for nylon tyre cord within the country.

The second large part of the gestation period was that of approximately 17 months which was taken in finalising foreign collaboration proposals. In the context of building up local expertise, it was considered essential by Government to ensure that the technical know-how obtained from the foreign collaborator

became available to Indian consultancy house for future use and the amendment of the contract to associate an Indian consultancy company took considerable time.

The third large contribution to the long gestation period in this case was that of approximately 12 months which was required for clearing the project from the MRTP angle. A particularly long period was taken in this case because it belonged to the inbetween period *i.e.*, where the letter of intent was issued prior to the coming into force of the MRTP law and where the licence was to be issued after the coming into force of this law. Though this period is undoubtedly very long, it is to be mentioned that when any major provision of law comes into force, the cases which are caught in the transitional period inevitably take long."

2.18. Asked to state whether any time limits have been laid down for the processing and disposal of applications for approval of foreign collaboration and for import of capital goods and if so, whether these were being observed in actual practice, the representative of the Ministry of Petroleum and Chemicals during evidence stated:

> "The Ministry of Industrial Development has laid down that all foreign collaboration proposals should be examined and, if necessary, placed before the Foreign Investment Board within a period of six weeks, and further the final decision should be conveyed to the party within a period of two months. We must confess that in the petrochemical field we have found it difficult to adhere to this time limit in spite of our best efforts. The foreign collaboration proposals can be examined speedily if similar proposals have been considered in the past. In those cases, the delay is nominal. But when a completely new proposal comes we do find it time-consuming to go into all aspects in consultation with the experts. I must confess that we have not been able to adhere to the time limit."

2.19. It is admitted by the representative of the Ministry of Petroleum and Chemicals during evidence before the Committee that it is taking a longer time to process and finally approve the proposals for foreign collaboration from the parties who have been issued letters of intent for setting up petrochemical units. This is sought to be justified on the ground that the petro-chemical industry involves import of sophisticated technology and equipment and firming up of

foreign credits takes a long time. The Committee feel that the reasons given are not sufficiently convincing as these can be advanced for import of modern technologies and equipment in any field. Besides, the Committee find from the details of the two inordinately delayed cases furnished by Government that unconscionable delays have taken place not for the reasons stated above but on account of the indecisive policy regarding import of technology and equipment and lack of foresight for which responsibility lies squarely with the Ministry of Petroleum and Chemicals.

2.20. The Committee would like the Ministry of Petroleum and Chemicals to clearly enunciate its policy and lay down suitable guidelines for the information of the general public in regard to import of technology and equipment in the petro-chemical field so that decisions in regard to foreign collaboration cases could be taken without undue delay. They also feel that it would go a long way in cutting out delays if at the time of inviting proposals for setting up an industry, a firm indication is given, after consultation with the Ministry of Finance, of two or three sources from which credit could be made available for the industry so that the entrepreneurs have a choice in negotiating for most competitive offers and Government also have a choice in accepting it and it should be the responsibility of Government to see that the credits originally indicated are available to the licensee at the appropriate time.

Import of Technology

2.21. A non-official had, in the course of evidence before the Committee, stated:

> "The basic process research for new paths should be bought. The ordinary know-how, we have already got in the country but we must pool it quickly so that we do not have to pay over and over again for the same know-how."

2.22. The point was raised during evidence that in view of the wide gap between the modern technology of the highest grade in the field of petro-chemicals available in the World and our research and development capability, would it not be advisable to buy the technology from abroad and duplicate it within the country rather than try to develop it indigenously. The representative of the Planning Commission stated:

> "The truth is somewhere in between in the sense that a certain

type of technology which has been developed or can be developed in India very quickly may be very competitive. When it comes to developing technology each country faces a particular sort of situation. I appreciate that there are certain areas of technology where the efforts that would be required to develop the technology is bound to take time and prove to be very expensive. Therefore, in such cases, we buy them from abroad. But we synchronise them with our research. When we buy overseas technology, since there may be some problems in the operation of the plant for the first two or three years, we set up a research and development body which will assist a great deal in removing the type of difficulties which may arise in the first two or three years. When we have a perspective look at the petro-chemical industry, many of the lines are going to increase manifold. So, we have to develop the pace of research very quickly."

Research and Training

2.23. The representative of the Ministry of Petroleum and Chemicals stated during evidence that Government was paying 'considerable attention' to development and research facilities and training in petrochemicals though, according to him, "one cannot be fully satisfied with what is being done." Asked whether it was an integrated programme or the efforts of different establishments were overlapping and consequently to some extent wasteful, he stated:

"One cannot say that research and development will be wholly integrated. There may be some overlapping, and there is no harm in it, but by and large, they confine themselves to their own areas.....If I have a research and development centre in the Indian Oil Company and there is an Indian Petroleum Institute which is a laboratory of the C.S.I.R., there may be a degree of overlapping, but we are ensuring that there is a complete coordination between the two."

2.24. While the Committee do not underestimate the importance and immense possibilities of indigenous research and development in the field of petro-chemicals to catch up with modern technological developments elsewhere, they would like Government to examine objectively whether it would not be far more economic if the basic sophisticated technnology and equipment is bought from abroad on a one-time basis and then duplicated, improved upon and adapted to our requirements through indigenous research effort.

Imoprt Licence for Spare Parts

2.25. It was suggested by a non-official during evidence before the Committee that import licence for spare parts should cover a period of 3 years instead of one year or less as at present, so that production was not hampered. In this connection Government have stated:

> "The provision for spare parts is governed by certain important factors like the following:
>
> (a) the need to ensure that the growing indigenous capacity for production of various types of spares etc. does not suffer a set-back by allowing unnecessary large imports;
>
> (b) the desirability for bringing about more and more indigenisation in this field; and
>
> (c) the limitations of foreign exchange resources.
>
> It may be stated in this connection that in cases of emergency where production is affected adversely, the requests for import of necessary spares, components, etc. are very expeditiously processed. For example, a few years back, there was an explosion in the factory of M/s. Synthetics and Chemicals resulting in stoppage of production. Their request for import licence was granted within a few days."

2.26. During evidence, it was pointed out to the representative of the Ministry of Petroleum and Chemicals that no industry would like to block money by importing and keeping in stock spare parts which were not essential. In the case of spare parts which were not indigenously available, and for which licence was issued, it would ordinarily take six months to one year to import as foreign exchange had to be found and enquiries had to be made as where those were available at competitive rates. Besides not every industry was in a position to import its spare parts requirements by air and it took a long time to get it by ship. The period covered in the licence for import of spare parts under the existing procedure namely one year or less is, therefore, very short and should be increased. The representative of the Ministry of Petroleum and Chemicals thereupon assured the Committee that the Government was prepared to apply their mind to this proposition.

2.27. The Committee recommend that, in the interest of uninterrupted production, Government should consider the feasibility of import licences being issued for the requirements of spare parts of Industrial Units for a period beyond one year at a time.

C. Implementation and Utilisation of licensed capacities

Delay in setting up of Licensed Capacities

2.28. An industrial licence is issued subject to the condition that "Effective steps" to set up the licensed capacity shall be taken by the party within 6 months and the capacity shall be established within a period of 12 months, from the date of issue of licence. The statement of licences for petro-chemical industries issued and under implementation as on 1st July, 1972 furnished by the Ministry of Petroleum and Chemicals in July, 1972 (Appendix III) however, shows that out of a total of 23 industrial licences issued to the State Public Sector/ Joint Sector/Private Sector which were under implementation as on 1st July, 1972, as many as 12 licences remain unimplemented for more than 3 years—some for as long as more than 10 years. These cases are detailed below:

Party	Item	Date of Issue of Licence
1. Gujarat Polyamides .	Nylon Filament Yarn	16-2-1960
2. Arthur Import & Export, Bombay	Do.	19-2-1960
3. Plastic Resins and Chemicals, Tuticorin	P. V. C.	21-6-1961
4. Hindustan Polymers Ltd. .	Styrene	15-2-1961
5. Durgapur Chemicals .	Phenol	5-5-1961
6. -Do-	Phthalic Anhydride	5-5-1961
7. J. K. Synthetics . .	Aerylic Fibre	9-3-1964
8. Herdillia Chemicals . .	Phenol	22-3-1965
9. Stretch Fibres, Bombay .	Nylon Filament Yarn	16-5-1966
10. Ahmedabad Mfg. & Calico Printing, Bombay . . .	P. V. C.	9-6-1967
11. Shree Synthetics, Ujjain .	Nylon Filament Yarn	1-8-1968
12. Suhrid Geigy . .	Phthalic Anhydride	5-11-1969

2.29. Government was asked to state the reasons for delay in implementation when, normally licences were required to be implemented within 12 months. They were also asked to state as to why no action was taken to cancel the licences of parties who had taken an abnormally long time to set up the licensed capacities. In a written note furnished to the Committee, Government have admitted that

in the past, the implementation of licences issued for petro-chemical industries had been somewhat tardy. The main difficulties encountered in the implementation of these licences are, however, explained as under:—

(i) Prior to 1964 letters of intent were not issued and the issue of industrial licences was on a very preliminary stage without tying up foreign exchange requirements, foreign collaboration and import of capital goods. Thus, it was only after the entrepreneur had the licence in hand that he devoted his attention to the main problems of setting up an industry. Several licensees ran into difficulties in arranging for foreign exchange to cover import of capital goods and for meeting collaboration payments.

(ii) Till very recently, not very many foreign country-to-country credits were available for use by industries. As a result projects had to be placed on the waiting list till fresh credit was negotiated. Certain other parties were also advised to approach private foreign banks for their requirements of foreign exchange.

(iii) Petro-chemical inductries were being set up for more or less the first time in the country. Not adequate expertise of such industries was available. Foreign collaboration took considerable time to arrange in the Indian situation.

(iv) The Petro-chemical industries are capital intensive. Licensees have to raise very large amounts by way of rupee finance, which took them time.

2.30. In respect of three of the licences which have been pending for over 10 years, the reasons for delay are given as under:

M|s. *Gujarat Polyamides Ltd.*—M|s. Prabhulal Bhikhabhai Ltd. (Later converted to Gujarat Polyamides Ltd.) were issued an industrial licence on 16th February, 1960 for manufacture of 15 tonnes|day caprolactum and 5 tonnes|day of nylon yarn. Between February, 1960 tnd May, 1963 the party submitted three separate proposals for purchase of plant and machinery from different sources. But the information provided was inadequate. These could not be accepted by Government for various reasons such as want of sufficient information,

non-availability of the foreign exchange required, etc. In view of the inadequate progress made by the party in these years, in May, 1963 the party was issued a show cause notice asking them to explain why their licence should not be revoked. In their representation the party said that they were trying to negotiate a fresh arrangement for their project. The Director of Industries of Gujarat State also recommended that the party be given extra time. In view of these factors, action to revoke the licence was not proceeded with. The party then negotiated a collaboration with M/s. Italviscosa Eastern Trading Co. for Nylon Yarn. This was approved in principle by Government in October, 1964. In March, 1965, the capital goods clearance for the nylon part of the project was issued. In August, 1965 the party asked for permission to issue capital and this was agreed to by Government in December, 1965. At this stage, the company could not get the financial institutions to underwrite the shares. Further in July, 1966, because of devaluation, the foreign exchange cost changed. It was only in June, 1968 that necessary clearances were obtained from the financial institutions. Further, at that stage there was difficulty in ear-marking the necessary foreign exchange and the company also spent considerable time in re-advertising their list of goods for which the earlier clearance had expired. It was only in June, 1970 when the IFC—German line of Credit—became convertable that the necessary foreign exchange for the project could be ear-marked. In general it may be mentioned that at the time this unit was licensed under the then existing Government policy, synthetic fibres were given very low priority in matters of allocation of foreign exchange and in obtaining financial resources from the financial institutions.

Now the project is at an advanced stage of implementation. Collaboration agreement has been entered into and most of the machinery has been ordered. The project is expected to be completed by the end of 1973.

From the above account it will be seen that Government has been keeping a close watch on this project. In the past when country to country credits were not available to the extent they are now, the tying up of foreign exchange did require considerable time. It will be noticed that when it was found that in the initial three years the party had

not made significant progress, a show cause notice was issued for revocation of the licence. Since the party was at an advanced stage of negotiation of a new scheme for purchase of equipment, the revocation was not insisted upon. Even after the collaboration with M/s. Zimmer (Caprolactam) and M/s. Italviscosa Eastern Trading Co. (Nylon Yarn) was approved in principle it took almost 5½ years for the foreign exchange and the rupee finance to be firmed up. This was largely on account of the fact that the required foreign exchange was not available. In short, though the project has had a long gestation period, the promoters have never shown any lack of initiative in pursuing the project. It was in these circumstances that Government did not find it fit to revoke the licence.

M/s. Arthur Import Export Co.: An industrial licence was issued to the party on 19th February, 1960 for manufacture of 800 tonnes of nylon yarn and 300 tonnes of nylon stable fibre. This licence had a validity period of 12 months during which foreign collaboration and import of capital goods had to be settled. During the period 1960—64, the party made four different proposals for import of machinery from various sources. This could not be agreed to by Government for different reasons. Thereafter in July, 1964, the party made a proposal for import of the machinery from G.D.R. on 8 years deferred payment terms. This was approved by Government in principle, but finally the rate of interest which was stipulated in the contract, could not be brought in line with Government's accepted norms, and so this proposal also fell through. Thereafter, in March, 1966, a Show Cause Notice was issued to the party for revocation of their licence. In their representation against the Show Cause Notice, the party mentioned that the proposed contract with G.D.R. had fallen through for no fault of theirs, and that now they have negotiated import from Italy and this should be considered by Government. This was agreed to by Government, but by the time the party was ready to utilise the foreign exchange which would be required, Italian suppliers' credit had been exhausted. At about the same time in September, 1968, Government action on this case was held up because the conduct of the company was under investigation in connection with the alleged contravention of the Import and Export

(Control) Regulations. This investigation continued between September, 1968 and January, 1970. On lifting of the bar on this party, they were given further time by Government in which to submit their negotiated proposals. The party did submit capital goods and collaboration proposals in November and December, 1970 but these were not in conformity with the capacity mentioned in the licence. In July, 1971, the progress made by the party was reviewed by Government and was found to be totally unsatisfactory. None of the effective steps, as defined under the Registration and Licensing of Industrial Undertakings Rules, 1952, had been fulfilled. Even the most recent set of proposals submitted by the party were nowhere near acceptable. In view of this, the Ministry took on hand proceedings for revocation of the licence. The licence was formally revoked on 25th September, 1972.

From the above account it will be seen that in the period 1960—64, the party did make proposals regarding C.G. collaboration but these could not be accepted by Government. In 1966, the Government had taken note of the fact that the party had made insufficient progress and issued a Show Cause Notice for revocation of the licence. Since the failure to firm up the various aspects of the project had not entirely been on account of lack of initiative by the party, Government did consider their proposals to import the capital goods from Italy. Thereafter again from September, 1968 to January, 1970, no action could be taken on this case as the company was under investigation. Since the company later came to be cleared, in all fairness they had to be given a further chance to try to firm up fresh proposals. However, the proposals submitted in November-December, 1970 were totally out of line with the scope of the project which had been licensed by the Licensing Committee and at this stage Government decided to review whether the licence was required to be revoked on account of unsatisfactory progress.

M/s. Hindustan Polymers: An industrial licence was issued to M/s. Hindustan Polymers on 15th February, 1961 for manufacture of Styrene/Polystyrene. The party negotiated for technical collaboration etc. and in April and May, 1964 they signed agreement with foreign parties for styrene

and polystyrene respectively. In December, 1963 the party had entered into a contract with foreign suppliers of equipment. However, this contract was to become effective only when down-payment was made. The actual tying up of foreign exchange took a very long time as the party had to negotiate for procurement of foreign exchange with a consortium of foreign parties and financial institutions. Only in May, 1966, the down-payment was made to the foreign equipment supplier and the equipment contract became effective.

The Polystyrene part of the project was commissioned in early 1969. The styrene part got further set back because of intervening devaluation of the rupee, which increased the project cost and the party was not able to raise the requisite finance. It was only in March, 1971 that the financial institutions released a part of the additional funds required for implementing the remaining styrene part of the project. The styrene part has now been completed and will go into operation shortly when alcohol from the new sugar crop becomes available."

2.31. In reply to a question during evidence as to how the Ministry watched and ensured that the licensed capacities were actually installed within the minimum time, the representative of the Ministry of Petroleum and Chemicals stated that the watch was kept by means of production returns received from the licensees under Rule 19 of the Registration and Licensing of Industrial Undertakings Rules, 1952. Besides he said:

"The number of units licensed for petrochemical items are still not very large. Therefore, the Government is in a position to keep track of the developments very closely. In a case, in their negotiations for foreign collaboration, the Government is always kept in touch because these proposals have finally to be approved by the Government. Therefore, the initiative taken by the parties as well as the progress made are well-known to Government."

2.32. It was pointed out to the witness that his Ministry should not merely watch the progress of implementation of the licences but also render active assistance to the licensees in implementing the licences and try to remove the difficulties coming in their way. The witness assured that he would get this point examined.

2.33. The Committee are distressed to note that a large number of industrial licences issued for setting up industrial capacities in the petrochemical field have remained unimplemented for a number of years. The reason advanced by the Ministry of Petroleum and Chemicals for non-implementation in most cases is again the delay in firming up foreign credits for the licensed projects. The Committee have separately commented upon the procedure for allocation of foreign exchange for the petrochemical projects and made certain recommendations. At this stage, the Committee would only stress that the Ministry of Petroleum and Chemicals being the Ministry responsible for the development of the petrochemical industry, should see that the industrial capacities licensed are speedily implemented and commercial production commences at the earliest possible time.

Under-utilisation of Installed Capacity.

2.34. It is observed from the data in respect of the petrochemical projects in production for the years 1969, 1970 and 1971 furnished by the Government to the Committee (Appendix IV) that in a large number of cases the installed capacities for manufacture of petrochemicals remain under-utilised. Some of the cases where very low utilisation of capacity during 1971 has been noticed are mentioned below:

(In Tonnes)

	Installed Capacity	Production in 1971
Indian Oil Corporation		
Toluene	14000	3167
F. C. I. Trombay		
Methanol	33000	23310
Durgapur Chemicals		
Phenol	6600	503
Phthalic Anhydride	3300	790
NOCIL		
Ethylene	60000	46768
Ethylene Oxide	12000	5112
Ethylene Glycol	10000	3807
Polythylene Glycol	1000	548

(In Tonnes)

Indian Oil Corporation	Installed Capacity	Production in 1971
Ethylene Dichloride	50000	38002
Acetone	11000	6420
M. I. Ketone	3700	1270
Butanol	8000	3345
Union Carbide		
Butyl alcohol	2950	1173
Hardillia Chem		
Diacetone alcohol	2000	1173
Phthalic Anhydride	6000	3490
Suhrid Geigy		
Phthalic Anhydride	3000	1713
Hindustan Polymers		
Polystyrene	7500	1603
Chemicals and Plastics Ltd.,		
V. C.	15500	7589
J. *K. Synthetics*		
Nylon Tyre cord/Ind. Yarn	360	39
Nylon Staple Fibre	1800	20
Acrylic fibre	540	73
Nirlon Synthetics		
Nylon Tyre cord/Ind. Yarn	1320	498

2.35. A statement showing the extent of utilisation of installed capacities during the years 1969, 1970 and 1971 in cases where it has been 75 per cent or less and the reasons therefor given by Government is at Appendix V. The reasons indicated are, in most cases, low demand because of delay in the commissioning of end product manufacturing capacity or large imports against import entitlements for export performance. Plant defects and operational problems is one of the reasons for low production, specially in the Methanol plant of F.C.I. and the Phthalic Anhyride plants of Durgapur Chemicals, Herdillia Chemicals and Suhrid Geigy. In the case of Durgapur Chemicals as a whole, additional reasons for low production are labour troubles, plant shut downs due to power failures,

bad plant maintenance, heavy corrosion of equipment due to intermittent operations and Durgapur "Bands".

2.36. In a written note the Ministry of Petroleum and Chemicals have in this connection further stated:

> "Petrochemical plants are usually planned and implemented on the basis of demand projections over 5-6 years. Such plants are unusually capital intensive and financial calculations show that it is profitable to plan on this basis even though capacity utilisation may be lower in the initial years. In some cases, the production of a particular petrochemical item is necessarily accompanied by the production of certain co-products, the quantum of which is determined by the process which has been found suitable on overall consideration. It is quite likely that the demand for some such co-products may not commensurate with their production—a position which can be unavoidable. This factor also may result in under-utilisation of the capacity as far as these co-products are concerned."

2.37. Answering the question as to what action is taken, or proposed to be taken, to see that at least the capacities already installed are fully utilised, it is stated:

> "Suitable action with reference to the difficulties of each case is taken to assist the unit to achieve its installed capacity. Broadly speaking, the action covers (i) the regulation of imports of items manufactured indigenously and (ii) assisting the units to remove technological bottlenecks and deficiencies in operation by allowing additional consultancy services and/or additional equipments and (iii) assisting such units to find export outlets.
>
> In this connection, it is mentioned that for public sector projects, there is a regular procedure of progress review meetings which are usually held every quarter in the Administrative Ministry at Secretary/Jt. Secretary's level. At these meetings which are attended by the representatives of Ministry of Finance, DGTD and other concerned organisations, the working results of the projects are thoroughly discussed and ways and means of removing bottlenecks/difficulties in the way of achieving optimum results are devised."

2.38. During evidence, the representative of the Ministry of Petroleum & Chemicals stated that there was demand for polyethylene and P.V.C. while the capacity of NOCIL Plant was not being utilised in full because of plant design problems, particularly the furnace. The suppliers had paid compensation for the defective design out of which import of a new furnace had been approved. The Hindustan Polymer unit was also having lots of difficulties, particularly financial problems. The management of the plant had recently changed.

2.39. The Committee are constrained to observe that in a large number of cases the installed industrial capacities remain underutilised. In many cases the reason advanced is that there is no market for the product as the installed capacity is more than the demand therefor and that higher capacity has been licensed keeping in view the demand projections for the future. In such cases and where there is export potential, Government should direct the parties to utilise the installed capacity to the optimum level and arrange for export of the quantity not required at home and earn foreign exchange until the domestic demand picks up, rather than restrict production at the demand level.

2.40. The Committee regret that in spite of considerable time being taken in scrutinising foreign collaboration proposals and selection of technologies, processes, plants and machinery for petrochemical units, many plants have turned out to be defective and are experiencing operational problems, e.g. Hardillia Chemicals, Suhrid Geigy, NOCIL, Durgapur Chemical and F.C.I. s Methanol Plant at Trombay. The Committee recommend that the Ministry of Petroleum & Chemicals should, in consultation with DGTD, analyse and identify the problems in respect of each such plant and take remedial action on an urgent basis so that the licensed capacities are fully utilised and there is no shortage.

2.41. Another reason given for the low production of some of the items is the delay in the commissioning of the down stream units. Thus, the production of Benzene by the I.O.C.'s Udex plant was low because of the delay in the commissioning of the G.S.F.C's Caprolactam Plant, which was to utilise the Benzene being produced at that plant. Similarly, the production in 1971 of Ethylene Glycol at the NOCIL Plant was only 38 per cent of the installed capacity as polyester consumer units did not come up in time. Such a situation, the Committee feel, could not have arisen had adequate care been

taken to develop the petrochemical industries in an integrated manner. The Committee hope that Government would see that there is complete coordination and synchronisation in setting up the mother and down stream units so that the production capacities of the mother units do not have to remain idle unnecessarily.

2.42. The Committee find it very distressing that on account of heavy imports being allowed against import entitlements for export performance under the Import Trade Control, the market for certain indigenous products e.g. Phthalic Anhydride and Phenol was shrunk and consequently certain producers had to limit their production. The Committee regret that due to failure on the part of the Government to foresee the consequences of this action, not only the industrial capacity existing in the country remained under-utilised but foreign exchange was unnecessarily spent on imports to meet the domestic requirements. The Committee desire that the Ministry of Petroleum and Chemicals, being the Ministry responsible for production of petrochemicals should keep a strict watch on the operation of the Import Trade Control and ensure that the imports of petrochemicals are allowed only when the indigenous production is unable to cater to the demand in the country.

CHAPTER III

PRODUCTION PROGRAMMES IN CENTRAL|STATE PUBLIC AND JOINT SECTOR

A. F.C.I.'s Methanol Unit at Trombay

3.1. The Fertiliser Corporation of India—a Government of India undertaking—were licenced a capacity of 30,000 tonnes per annum of Methanol at their Trombay Plant. The capacity was installed and the unit was commissioned in October, 1966. The production of this unit during 1969, 1970 and 1971 was 12227 tonnes, 21280 tonnes and 23310 tonnes respectively as against the rated capacity of 30,000 tonnes. In March 1970, the F.C.I. was licensed an expansion of this unit by 7,500 tonnes per annum. It is stated that the expansion project is under implementation and is likely to be operational by the end of 1973. During evidence the representatives of the Ministry of Petroleum & Chemicals was asked as to why the unit had not been able to attain the rated capacity even after five years of its working. He stated that the Methanol Unit was a turn-key job entrusted to a foreign contractor. The Plant delivered to the F.C.I. had a defective catalyst for which the contractor was responsible and liable to pay compensation. The matter was under arbitration before the International Chamber of Commerce and the proceedings were going on. He added that to avoid such a situation as far as possible in future "We have been taking the precaution of sending our experts...to visit the plants put up by the licensers abroad to see if they are working properly."

3.2. The witness was further asked to state as to why was this plant licensed in March 1970 to expand its capacity by 7,500 tonnes per annum when the defects in the plant were persisting and it was not able to achieve its rated capacity. He answered that the expansion was allowed as "a long term solution" because the Synthesis Section and the Distillation Section had a capacity of 125 tonnes a day whereas the Gassification Section had a capacity of only 60 tonnes per day. It was, therefore, considered advisable to provide a higher capacity for fuller utilisation and the licensed capacity was increased from 100 tonnes per day to 125 tonnes per day. As regards the catalyst problem, he said, it had been remedied to a considerable

extent; a new catalyst had been provided and that had improved the capacity of the Gassification Plant. In a written reply to another question relating to this plant, it has been stated that the problems have been resolved and fresh reformers having a capacity of 37,500 tonnes|annum "are being erected."

3.3. According to the facts stated in the 48th Report of the Estimates Committee (1967-68), the contract for the erection of the Methanol Plant on a turnkey|basis was awarded to M|S Girdler Corporation of U.S.A. on 1-9-1964. The Plant went into production from October, 1966. The commissioning of the plant was delayed, *inter alia,* on account of the catalyst failures. Subsequently, the Fertilizer Corporation of India entered into a contract with M|S Catalyst and Chemicals Incorporated for the supply of their latest calatyst which was then stated to be "under trial runs.". It was also stated in the report that the Plant was then working at 45 tonnes per day capacity against the installed capacity of 100 tonnes per day. The 65 Report of the Estimates Committee (1968-69) reproduced the following reply of the Government received by the Committee in September, 1969:

> "As the contractor has failed to fulfil the contractual obligations in regard to performance of guarantee test etc. and the plant is not working to the rated capacity, action is already in hand to refer all the disputes in respect of fulfilment of the obligations by the Contractor to arbitration according to the rules of International Chamber of Commerce. Suitable action is also being taken to stabilise the production in the Methanol Plant. With the adoption of another Reformer Catalyst the plant has so far reached about 60 per cent of its rated capacity (viz. 60 tonnes a day). The Fertilizer Corporation of India are working out a scheme for making additions and alterations for raising the capacity further."

3.4. The Committee find that the default of the contractors M/S Girdler Corporation of U.S.A. in regard to agreement for the setting-up of the Fertilizer Corporation of India's Methanol Plant at Trombay and the delay in preferring the claim against the firm was already dealt with by the Committee on Public Undertakings (1968-69) in paras 2.49 to 2.60 of their Twenty Sixth Report (4th Lok Sabha) and they had made certain recommendations in that regard. The

Committee would, however, take this opportunity to stress the importance of speedy conclusion of the proceedings before the International Chamber of Commerce before which the arbitration case has been pending for a long time.

3.5. Now that Government have permitted the plant to expand its capacity, the Committee stress that increased production as per expansion programme should be brought about in least possible time. Above all, care should be taken that production does not come to be vitiated by shortcomings which had depressed production of the original unit.

B. Fertiliser Corporation of India s Methanol Plant at Haldia

3.6. The Haldia Project of the Fertilizer Corporation of India, including the Methanol Plant, was approved by Government on 10-11-1971 at a total cost of Rs. 8802.65 lakhs, including the foreign exchange component of Rs. 2903.70 lakhs. The project is based on fuel oil as feed stock and the plant capacities are as follows:—

Product	Te/day	Te/year
Ammonia	600	1,98,000
Nitro Phosphate	1,264	3,79,000
Urea	500	1,65,000
Soda Ash	200	50,000
Methanol	125	41,250

The estimates cost of Methanol Plant included in the above sanction is Rs. 786.58 lakhs, including foreign exchange component of Rs. 325.94 lakhs. The licence agreement for the methanol process has been entered into with M/s. Halder Topsee and this agreement was approved by Government on 30th August, 1972.

3.7. During evidence the representative of the Ministry of Petroleum & Chemicals informed the Committee that the present target for mechanical completion of the plant is end of 1975 and for commercial production middle of 1976.

3.8. The Committee desire that the Ministry of Petroleum and Chemicals should closely which the progress of setting up of Fertilizer Corporation of India's Methanol Plant at Haldia and see that

the projects is commissioned according to schedule by mid 1976 and that the shortcomings noticed in the case of the Fertilizer Corporation of India's Methanol Unit at Trombay do not recur.

C. Durgapur Chemical's Phenol and Phthalic Anhydride Plants

3.9. Durgapur Chemicals—West Bengal Government Undertaking—were issued a licence for expansion of capacity for production of Phenol from 3300 tonnes to 6600 tonnes on 5-5-1961. The expansion has not materialised as yet, even after a lapse of 11 years. On the other hand, as against the installed capacity of 3300 tonnes, production during 1969, 1970 and 1971 was as low as 433, 716 and 503 tonnes, respectively. This plant was also issued a licence on 5-5-1961 for expansion of capacity for Phthalic Anhydride from 3300 tonnes to 6600 tonnes. The expansion licensed has not been implemented so far while the actual production has been no more than 1615 tonnes in 1969, 1288 tonnes in 1970 and 790 tonnes in 1971. Inspite of this performance, a letter of intent has been issued in May, 1972 to this Plant for a further expansion of its licensed capacity from 6600 tonnes to 9900 tonnes.

3.10. The representative of the Ministry of Petroleum & Chemicals was, during evidence, asked to state the reasons for the poor performance of the Plant as also for allowing it further expansions of capacity when the expansion allowed to them earlier had not materialised. He explained that the causes for low performance of the plant were shut downs due to power failures, labour troubles and "Durgapur Bunds", bad maintenance and heavy corrosion necessitating complete overhaul spread over a period of 10-12 months. The additional reason for the low production of Phenol was the difficulty in the procurement of Benzene from the Durgapur Steel Plant. In the case of Phthalic Anhydride, apart from the general reasons, the specific reasons were technological and operational problems, difficulties in supplies of napthalene and restricted market due to large stocks of material imported by exporters under the permissible chemical category. According to him, the market was now improving due to restrictions placed on imports and the performance of the plant was also expected to improve on account of the Catalyst having been changed. Regarding the expansions in the production capacity of Phthalic Anhydride allowed to this plant, the witness stated that this was done "so that it can set up a second orthoxylene—based viable unit".

3.11. It was pointed out to the witness that looking at the past,

performance of the Durgapur Chemicals and the time taken in getting over the problems besetting it, it did not appear to be a sound decision to allow it expansion of capacities and commitment of resources without much hope for the capacities being substanially utilised. He replied that in setting up capacities 'social costs' have also to be considered. Amplifying it, he said:

> "...in the case of West Bengal where one of the causes of labour unrest is lack of employment, there is a conscious policy of the Government of India to encourage industrial growth even by going slightly out of the way. That is what I Meant by 'social costs,."

3.12. The Committee are unhappy to observe that during 1971 the production of Phenol and Phthalic Anhydride at the Durgapur Chemical's Plant has been as low as 503 tonnes and 790 tonnes respectively against the installed capacity of 3300 tonnes for each of these products. The production during 1969 and 1970 was similarly poor. The unit was given a licence in 1961 for expansion of capacity to 6600 tonnes in respect of both the products which has not yet been implemented. In spite of this consistently poor performance of the plant as also non-implementation of the expansion allowed as far back as 1961, the unit has been allowed an expansion of capacity for Phthalic Anhydride in 1972 from 6600 tonnes to 9900 tonnes. While the Committee understand the social compulsions under which the expansions of capacities had to be allowed to the Durgapur Chemicals, they would, at the same time, stress that it is the responsibility of the Government to see that the licensed capacities are fully put to productive use before further expansions are allowed to a Unit. Government should, while licensing additional capacity, also keep in view the interests of the processing units which use these products as raw material and also the need for the achievement of self reliance in the country at the earliest possible time.

3.13. One of the reasons for low production of Phenol at the Durgapur Chemicals' Plant, it is stated, was the difficulty in the procurement of Benzene from the Durgapur Steel Plant. The Committee need hardly stress that the problem of shortage of Benzene faced by the Durgapur Chemicals' Plant for production of Phenol should be resolved at the earliest by arranging for supplies on assured basis and in adequate quantity either from the Durgapur Steel Plant or from other manufacturers. It is pertinent in this connection to mention that the Indian Oil Company's Udex Plant had to keep its production of Benzene low because of lack of markets.

D. Indian Oil Corporation's Benzene and Toluene Plant

3.14. The Udex Plant of Indian Oil Corporation—a Government of India Undertaking—has been designed to produce 3300 tonnes/year of Benzene and 1400 tonnes per year of Toluene. The plant was started in December, 1968 and the production levels from 1969 onwards are as follows:

(Figures in tonnes)

	Benzene	Toluene
1969-70	8,650	1,119
1970-71	18,198	2,612
1971-72	22,541	3,468
1972-73 (April-October)	15,451	4,103

It is stated that the low capacity operation has been due to the delayed completion of caprolactam plant of the Gujarat State Fertiliser Corporation which has an estimated requirement of 23,000 tonnes of Benzene. This plant was originally scheduled for commissioning in 1969 and is now likely to come up sometime in middle 1973. Besides this, other consuming units like manufacturers of Benzene Hexa-chloride did not come up in time. The demand for Benzene by the existing consuming industries has however, increased rapidly during the last year because of non-availability of Benzene from the steel plants. The Udex plant has now been operating at progressively increased capacity and presently operating on the installed capacity level (Benzene capacity utilisation in 1972-73 was 93 per cent).

3.15. As for the low production of Toluene, it is stated that Toluene is a co-product obtained while producing Benzene and a certain level of production has to be maintained for technological reasons. The demand for Toluene for Defence and other end-uses was estimated at the time of the operation of the plant. Surplus Toluene is added to the motor gasolene for bringing up the octane number.

E. Gujarat State Fertiliser Company's Caprolactam Project

3.16. Gujarat State Fertiliser Co. Ltd.,—a Gujarat State Joint Sector concern—was issued a letter of intent for the manufacture of 20,000 tonnes of Caprolactam in November, 1966. This was convert-

ed into an industrial licence in January, 1972, that is after a lapse of more than 5 years. As to the progress in the implementation of this project, it has been stated by Government in July, 1972 that foreign collaboration and capital goods imports for this project have already been approved; equipment for indigenous and imported sources is being procured and it is reported that the project will be operational by about the end of 1973.

3.17. The Ministry was asked to state the reasons for the delay in clearing proposals for foreign collaboration and import of capital goods particularly when the industry was in the core sector and caprolactam was being imported every year. They have in a note furnished to the Committee stated as follows:

"The party was issued a letter of intent in November, 1966. G.S.F.C. were able to submit a contract which they had entered into with M/S Hitachi Ltd. of Japan on 15th July 1968. Various points relating to this proposed contract were examined and the case was considered by the Foreign Investment Board in January, 1969. The terms of foreign collaboration, as approved by the Board in Jan. 1969, were communicated to M/S G.S.F.C. in February, 1969. The firm was advised to make a C.G. application immediately. In spite of efforts by the Government it was not found possible to include this project under the Yen or Suppliers credit, and M/S G.S.F.C. were advised in June, 1969 that it would not be possible to allocate the Yen credit to cover the foreign exchange component and they were requested to review all offers received from sources acceptable to the Government to enable them to pursue alternative offers. G.S.F.C. however felt from their negotiations with Japanese Process Licensors that it may be possible that this project could be included under the Yen credit if this matter was taken up again by the Government of India with the Japanese Government. They were advised by the Ministry to pursue alternative offers, evaluate them, and submit the information so that Ministry could explore the possibilities of getting the necessary foreign exchange from other sources for setting up of the caprolactam plant. After obtaining an assessment of the various offers by G.S.F.C., Ministry of Finance was approached and they were able to indicate that a combination of French Credit and ICICI loan may be feasible for financing the foreign exchange component of the project. G.S.F.C. were advised

of this by the end of March, 1970. They were able to finalise their process selection and submit a second contract with SWISS Process Licensor (INVENTA) and a French Design Engineering Firm (TECHNIP) in June, 1970. The revised foreign collaboration proposals were approved by the Government in October, 1970. Subsequently the first C.G. application of the party was cleared on 4th January 1971. The supplementary C.G. requirements have also been cleared."

3.18. As regards the physical progress made in implementation of the project, it is stated that civil works have been completed to the extent of 60 per cent, machinery has started arriving at site, erection contract has been awarded, pre-fabrication has commenced and erection is likely to be completed in July, 1973 and production is likely to commence in October, 1973.

3.19. It is noted from the above data that after the issue of the Letter of Intent, it took 19 months for the GSFC to negotiate with the Japanese collaborators and submit a contract for the approval of Government and Government took 7 months to approve the same. After all this exercise, the Ministry of Petroleum & Chemicals found that the Japanese Credits were not available for this project and about 4 months went by before the fact could be communicated to the party. Initially GSFC was still hopeful of Japanese Credit being available but later, on the advice of the Ministry of Petroleum and Chemicals, started exploring other sources. It took another 9 months for the Ministry to indicate to GSFC, in consultation with the Ministry of Finance, the source from which credit was available. Thereafter, GSFC took 3 months to submit the contract from those sources and the Government took another 4 months to finally approve the same. The clearance of first application for import of capital goods took another 3 months.

3.20. The Committee are greatly concerned to note that the caprolactam project of the GSFC which was originally scheduled for commissioning in 1969 has been delayed by more than 4 years and is now scheduled for commencement of production in October, 1973. This has held up the fuller utilisation of the installed capacity for Benzene at the Indian Oil Corporation's Udex Plant. The Committee also find that the Ministry of Petroleum and Chemicals had failed to properly advise the party, after consultation with the Ministry of Finance, as to the source from which foreign credit was available for the project so that GSFC could negotiate with appropriate parties

from the very beginning. This should have been done at the stage of considering the application for the issue of letter of intent which was some time before November, 1966. Instead, the party was advised of the appropriate source only in March, 1970 i.e. after nearly 3½ years. This indicates that there is something seriously lacking in the licensing procedure in cases involving foreign collaboration and for the allocation of credits therefor. The Committee recommend that the Licensing Committee and the Foreign Investment Board should seriously consider the matter and devise suitable procedures to see that after a project is cleared by the Foreign Investment Board, it is not denied the requisite foreign exchange.

3.21. The Committee would in this connection like to point out that in the application for the issue of an industrial licence the party has to indicate the particulars of foreign collaboration intended, if any. The Committee would suggest that at the time of considering the issue of letter of intent to the party, the matter should be examined in consultation with the Department of Economic Affairs and at that stage, as far as possible, a clear indication should be given to the party whether the requisite foreign exchange would be available for entering into collaboration with that party, and if this is not possible, then two or more alternative sources may be indicated to the party so that the party can proceed with the negotiations from appropriate sources only and that time is not lost in exploring collaborators from sources from which credits would not be available.

3.22. The Committee further recommend that the Ministry of Petroleum & Chemicals should keep a close watch on the progress of the Caprolactam Project of GSFC and ensure that it is commissioned, as programmed, by October, 1973.

F. Indian Petrochemicals Corporation Ltd.'s Gujarat Aromatics Project .. ..

3.23. The Gujarat Aromatics Project of the Indian Petrochemicals Corporation Limited—a Government of India undertaking—has been approved by Government to produce the following petrochemicals:

	Tonnes
D. M. T.	24,000
Orthoxylene	21,000
Mixed Xylene	2,500

3.24. The original estimate of cost of this Project is stated to have been Rs. 22.4 crores. There revised estimated cost now sent for the approval of the Government is Rs. 28 crores. The actual cost, it has been stated, would, however, be known by March, 1973 only when it could be assessed as to what has been the extent of escalation, if any.

3.25. The progress of the Project has been indicated by the Ministry of Petroleum and Chemicals in July, 1972 as follows:—

> "The original schedule based on foreign exchange clearances being accorded by early 1968 was completed in 1971—36 months from the date of foreign exchange clearance. Contracts with appropriate foreign exchange clearances (DM suppliers credit) were signed in July, 1968; but soon after this, Government decided to move from this suppliers credit to German Capital Aid: the repayment terms of this source of foreign aid are much softer than for suppliers credit. German Capital Aid Loan (From KFW) requires project appraisal by KFW of West Germany: this appraisal took almost 16 months and the project and loan for it was approved by KFW only in December, 1969: consequently the schedule automatically stood modified. Even so, efforts have been made to expedite the schedule. The project is at present in an advanced stage of completion. The major portion of the imported equipment has been received at site. Efforts to expedite the completion schedule of the project have not been as successful as hoped for because of the difficulties faced by the vendors in obtaining raw materials like steel, stainless steel, etc. for fabrication of indigenous equipment expeditiously. Nevertheless, the project is expected to be completed by the end of this year."

3.26. The Additional Secretary, Ministry of Petroleum and Chemicals during evidence before the Committee stated that the Aromatics Project was expected to be commissioned by the end of December, 1972 and commercial production was expected to commence by March, 1973. The Chairman, Indian Petrochemicals Corporation Limited also during evidence indicated the progress of the Project as follows:—

> "....Aromatics project consists of three sections. As it is, the commissioning of off site facilities has already been started and the water circulation systems and other systems

have already been tried. Almost all the production equipments in DMT Plant have already been erected and by the end of November we should be completing the testing of all the main equipment of the DMT Plant. The commissioning team from Germany is expected early in December and therefore we are fairly certain that the DMT plant would be in a position to commence trial runs by the end of this year and will go into production by March next year (1973)".

3.27. During evidence, the Additional Secretary Ministry of Petroleum and Chemicals stated:

"When the project was presented in the beginning there were two alternatives—100 per cent suppliers' credit or 30 per cent suppliers' credit and 70 per cent capital aid. Capital aid had then not been cleared. The Department of Economic Affairs were apparently informed by the German Government that capital aid would be forthcoming for this project. Therefore, they asked the Ministry to switch over from suppliers' credit to capital aid. Once capital aid was agreed to, KFW, the West German Government agency for clearing capital aid, came into the picture and said that it would carry out a detailed appraisal of the project before approving of capital aid. It is no doubt true that in this process of detailed appraisal, quite a lot of time was lost. But here again, with the assistance of the Department of Economic Affairs, we got releases of free foreign exchange so that design and engineering of the plant could be taken up even in advance of the KFW sanction of capital aid."

He replied in the affirmative to a specific question during evidence addressed to him as to whether he meant that "it was a change in the German Government's aid giving programme that had caused this delay."

3.28. The representative of the Department of Economic Affairs agreed during evidence that the switch over from German Suppliers Credit to German Capital Aid took time as it involved project appraisal by the German agency KFW. But, according to him, "on account of this we did not allow the project to suffer..... and made available free foreign exchange resources for the payments to be made on due dates." In November, 1967, he said, the project was first cleared by the Special Committee and in July, 1968 the

first instalment of free foreign exchange was made available for down payment to the process licensers. Subsequently two more instalments of free foreign exchange were made available in August, 1969 and December, 1969. All these payments were made under a mutual agreement between the Ministry of Finance and the KFW that these payments would be reimbursed to Government of India upon the effectuation of the Capital Aid Loan Agreement.

3.29. The representative of the Department of Economic Affairs was further asked as to whether at the time the German Suppliers Credits were allocated for this Project, was the option to allocate German Capital Aid for this Project also available to his Department. He replied:

> "Gleaning from the discussions on this point at that time, I notice that originally this was expected to be fitted under the 100 billion DM suppliers' credit and at the same time the idea was that to the extent Government credit became available for the purpose, apparently subsequently, the value under the suppliers' credit could be reduced at a future date from time to time, so that either a mixed financing or a transfer from suppliers' credit to Government-to-Government credit as and when they became available, would be made possible. So, it has to be inferred from this that at the time when they first approached the problem, probably adequate Government credit was not available."

3.30. The Additional Secretary, Miniistry of Petroleum and Chemicals was thereupon asked that if free foreign exchange was being released by the Ministry of Finance for the project while the formalities involved in the switch over of credits were in progress, how did he maintain that the switching over of credits was responsible for the delay in the progress of the Project. He replied:

> "I would again submit that it is not that foreign exchange was the cause of delay but tying up certainly meant a slight slowing down of project work."

3.31. In a written note furnished to the Committee on the 10th March, 1973, the Ministry of Petroleum and Chemicals have further explained the position. According to this note:

> "Switching over of the financing arrangements from mixed pattern of Supplier's Credit and Government Credit

(Capital Aid) to 100 per cent Government Credit cannot be said to have affected directly the project schedule inasmuch as payments were made from time to time out of free foreign exchange in order to enable Krupp and Engelhard to continue their work. The finalisation of the loan agreement took much longer time than anticipated in the first instance. As a consequence, and as a prerequisite for the import licenses for items in the Supply Contract to be issued, reappraisal of the list of goods by DGTD and renegotiation of the contract price had arisen and this took some time."

3.32. The note indicates the following main causes for delay in commissioning of the Project:

"(a) When the indigenous fabricators went out on bids for purchase of materials required for fabrication in India, there was a world-wide shortage of nickel and indigenous fabricators were not in a position to obtain quotations from foreign materials suppliers in terms of delivery dates or price. The consequence of the nickel shortage lasted approximately 6 months, and it was only towards the end of 1970 beginning of 1971 that the indigenous fabricators were in a position to place orders for import of bulk materials after getting the necessary import licences, foreign exchange allocations for import of materials etc. The deliveries from the indigenous fabricators' shops, therefore, got delayed also correspondingly;

(b) The fact that almost all of the domestic fabricators had engaged in the manufacture of equipment for petrochemicals for the first time entailing a large number of revisions to the fabricators drawings and consequently delays in delivery schedules;

(c) There were strikes in the shops of one of the major suppliers of the fabricated items which stopped work and, therefore, further delayed deliveries; and

(d) Delay in project construction was occasioned by a strike and a complete cessation of work on the part of a labour of a major erection contractors at site."

3.33. The Committee are distressed to find that the Gujarat Aromatics Project which was conceived as far back as 1963 to produce DMT—a Synthetic Fibre Intermediate and Orthoxylene—a primary source for manufacturing plasticisers, dyes, alkyd resins etc.—for

feeding the down stream units could not be commissioned as yet, though it was due for commisioning in 1971. The Committee were during evidence assured that the D.M.T. plant would go into production by March this year but no firm date had been mentional for the commissioning of the plant for the manufacture of Ortho/Mixed Xylenes.

3.34. The Committee are surprised that the Ministry of Petroleum and Chemicals initially tried to blame the Ministry of Finance for the delay in commissioning of the Project by maintaining that the process of change over from one source of credit to another was spread over 16 months ending in December, 1969 and consequently the schedule automatically stood modified. The Committee are, however, convinced that the delay in the commissioning of the Gujarat Aromatics Project was not on account of foreign exchange difficulties as the Ministry of Finance were, under an arrangement with KFW of West Germany, releasing free foreign exchange for the project from time to time as per the requirements of the Ministry of Petroleum and Chemicals, during the process of change over from one credit source to anoher credit source in the same country.

3.35. The Committee strongly deprecate the leisurely manner in which the project is being implemented and hold the project authorities as well as the Government responsible for the delay. The Committee recommend that the Ministry of Petroleum and Chemicals should at least from now on see that the different plants of the project are commissioned at least by the target dates now fixed.

G. Indian Petrochemicals Corporation Limited Gujarat Olefins Project

3.36. Gujarat Olefins Project, also of the Indian Petrochemicals Corporation, consists of the setting up of a Naphtha Cracker and the production of the following primary petrochemical products:

	Tonnes/ annum
Ethylene	1,30,000
Propylene (Polymer Grade)	35,000
Propylene (Chemical Grade)	43,000
Butadiene	22,000
Benzene	23,600

According to the decision taken by Government in December, 1970, the down stream units are also to be taken up in the public sector as a part of the Olefins Project. The following capacities are proposed to be set up:

	Tonnes/ annum
Synthetic Rubber .	20,000
Detergent Alkylate	30,000
Acrylonitrile	24,000
Polypropylene	30,000
Polyethylene	40,000
Ethylene Glycol	20,000
Acrylic Fibre	12,000

3.37. The approved capital cost of the Olefins Project and its downstream units is as under:—

DPR/FEASIBILITY REPORT (Rs. in Crores)

	Capital cost	Foreign exchange
1. Olefins	*31·9	8·44
2. Acrylonitrile	**17·04	6·25
3. Synthetic Rubber	***15·60	3·43
4. L. D. Polythylene	17·98	7·18
5. Polypropylene	18·87	5·52
6. Ethylene Glycl	9·10	2·36
7. Detergent Alkylate	12·92	3·03
8. Acrylic Fibre	23·89	9·33

3.38. Progress in the implementation of the project was indicated by the Ministry of Petroleum and Chemicals in July, 1972 as under:

*This includes Rs. 2·10 crores of Working Capital.

**This includes Rs. 1·12 crores of Working Capital.

***This includes Rs. 2·10 crores of Working Capital.

Naphtha Cracker: A substantial portion of the design|engineering work for the naphtha cracker has been completed. Orders for long delivery equipment like boilers have already been placed. Import licence applications for critical long delivery equipments has been filed by the Indian Petrochemical Corporation Limited and these have been examined by Government; foreign exchange for these is expected to be allocated shortly.

Primary Petrochemicals: Proposals concerning purchase of design, engineering services for the Olefins Plant, for Butadiane extraction, Benzene extraction and pyrolysis gasolene hydrogenation have already been approved by Government. Approvals have already been given for the basic design engineering of the Olefins project by M|s. Lummus Company Limited of England.

Downstream Units: Proposals for purchase of technology and basic services for all the down-stream units have been approved by Government. The final approval allocating the necessary foreign exchange is to be issued.

3.39. It is further stated that the Naphtha Cracket and the down-stream units utilising gaseous products available from the Cracker form an integrated complex and the implementation of this will be carried out in a synchronised manner to ensure viability of the entire complex. On the basis of detailed discussion with the process licenser|design engineering firms, it is assessed by Government that the entire complex will be commissioned in a period of 30 to 36 months from the receipt of the allocations of foreign exchange for these projects.

Slow progress in setting up the Olefins Project

3.40. It has been stated that the detailed project report for Naphtha Cracker was submitted in July, 1968. The expenditure sanction for the project was given in April, 1969 and May, 1970. Between October, 1969 and May, 1970 the collaboration agreement with M|s. Lummus of U.K. was discussed and finalised. The agreement was signed in May, 1970. In July, 1970, it was approved by the Department of Economic Affairs and free foreign exchange was released for the engineering design and fees to be paid to the collaborators. The work on the Cracker could commence immediately thereafter. But in December, 1970, a decision was taken to set up down-stream units also in the public sector as a part of this project. The investment sanction for these down-stream projects was given between June and November, 1971. Between September, 1971 and around July|August, 1972 various offers from process licensers for these projects were appraised and finally selected.

3.41. Replying to the point as to why the work on the Naphtha Cracker could not be started immediately after the agreement with M|s. Lummus was finally approved by the Department of Economic Affairs and the foreign exchange was released for the project in July, 1970, the Ministry of Petroleum and Chemicals have stated: "The Olefins Project is a producer of raw material only and the major raw materials to be produced are gaseous and cannot be stored without enormous investment. It is because of this that integrated down-stream plants have to be erected adjacent to the Olefins Projects so that they synchronise with the production of Olefins and the final products are liquids and solids which can be stored and transported relatively easily and without very large investment being incurred on this."

3.42. The project was posed to U.K. authorities for allocation of credit in May, 1971. The U.K authorities had to carry out a techno-economic appraisal of the entire project, *i.e.*, Olefins project as well as the down-stream project before making any commitment. During evidence, the representative of the Department of Economic Affairs was asked to indicate the latest position regarding the tying up of foreign Credits for the project. He stated that for the main Naphtha Cracker project, allotment had been made from the U.K. Credits and the legal documents for the aid were being concluded. Meanwhile, he said, free foreign exchange was being allotted for the project from time to time as per the requirements indicated by the Ministry of Petroleum and Chemicals. As for other units and plants, French and West German Credit have been allotted. For procurements from U.S.A., free foreign exchange was being released.

3.43. Asked to state whether the Ministry of Petroleum and Chemicals were satisfied with the foreign exchange allocations for the Gujarat Olefins Project including the down-stream units, the Additional Secretary, Ministry of Petroleum and Chemicals stated:

> "We are very satisfied and except for one or two (Projects) the foreign exchange arrangements for all the other projects have been fully tied up."

3.44. In reply to the question during evidence as to when would the different units of the Olefins Project be commissioned, the representative of the Ministry of Petroleum and Chemicals stated that the Naphtha Cracker would be completed and commissioned by the end of 1974 while he expected the other down-stream units to be commissioned gradually from that time till the middle of 1975.

3.45. The Committee are greatly disappointed to observe that the progress made in the setting up of the Gujarat Olefins Project is much behind schedule. They are concerned to note that he commissioning of the Project had to be re-scheduled so as to synchronise with the setting up of the down-stream units which were decided at a later stage to be located in the public sector. The Committte feel that when Government took a decision about the setting up of the Gujarat Olefins Project, it should have simultaneously gone into the question of setting up the down-stream units in which the products manufactured at the Gujarat Olefins Project were to be processed. In this process of thinking in instalments and lack of integrated planning, the country has lost several years of valuable time in the development of petrochemical industry which has vast potentialities for generating employment and making significant contribution towards industrial growth. The Committee would like to emphasise that Government should have an integrated plan for all such projects in the interest of their speedy implementation. It should also be made clear right from the very beginning whether a project or a part thereof is to be located in the public or private sector so that there is no scope for any mis-conception at a later date.

H. Assam Petrochemical Complex

3.46. The Prime Minister announced in the Lok Sabha on the 5th December, 1969 the decision of the Government to establish an integrated DMT|Polyester Fibre petrochemical complex in Assam. The relevant extract from the Statement of the Prime Minister is reproduced below:

> "The Government of India also recognise the need to take measures for the industrialisation of Assam based among other factors, on its oil resources. Assam crude oil is rich in aromatics which provide the base for the development of petro-chemicals. With the availability of adequate raw materials from the proposed increase in refining capacity. Government have also decided that an integrated DMT|Polyester fibre petro-chemicals complex should be established. Suitable provision for this refining-cum-petrochemical complex will be made in the Fourth Plan now under finalisation."

3.47. The feasibility report for a petro-chemical complex, at Bongaigaon in Assam was submitted to Government in May, 1971. This envisaged an integrated DMT—Polyester Staple Fibre Project which would produce 30,000 tonnes per annum of polyester fibre and 10,550 tonnes per annum of the associated orthoxylene. This petro-

chemical complex is proposed to be dovetailed to a refinery at Bongaigaon having a through-put of 1 million tonnes of crude. Government have approved the setting up of the refinery at a capital cost of Rs. 14.90 crores (with a foreign exchange component of Rs. 1.5 crores) and the petro-chemical complex at a capital outlay of Rs. 66.2 crores with a foreign exchange component of Rs. 22.87 crores. Since at the time of the formulation of the Fourth Plan, the concept of the Assam Complex was very preliminary and the project had not been fully determined, on *ad hoc* basis, an allocation of Rs. 10 crores was made. It is now assessed that Rs. 3.85 crores will be spent within the Plan period for the following purposes:—

(i) Payment of licence fee;
(ii) ocquisition of land;
(iii) construction of some civil works;
(iv) down-payment for equipment;
(v) payment of engineering fee to consultations; and
(vi) payment for soil testing and other miscellaneous expenses.

3.48. This project is to be implemented by a new company which is in the process of being floated. Draft Articles of Association have been drawn up and are stated to be under scrutiny. Till such time as this new company is formed, Indian petro-chemicals Corporation Limited has been entrusted with the implementation of the project. Indian Petro-chemicals Corporation Limited is currently examining the relative advantages of the TPA route as against the DMT route which is at present being used in the country. Discussions are being held with process licensers and the terms are being negotiated. The selection of the process is likely to be completed by the end of February, 1973. There after a formal contract will be negotiated with a party for a particular process and necessary Government clearance will be sought. The agreement, it is stated, likely to be entered into by September-October, 1973.

3.49. The Committee observe that the feasibility report for the Assam Petrochemical Complex was submitted in May, 1971; yet the assessment is that only Rs. 3.85 crores would be spent during the Fourth Plan period on this scheme out of an allocation of Rs. 10 crores therefor during that period. The Committee underline the need for concerted effort by the authorities concerned for implementing the Complex in the early part of the Fifth Plan so as to accelerate the industrialisation of this economically backward region which is, as

the Prime Minister indicated in her statement in Lok Sabha on the 5th December, 1969, the dominating consideration in locating the Refining-cum-Petrochemical Complex there.

I. Barauni Petro-hemial Complex

3.50. The Barauni Aromatics Project was one of the schemes tentatively approved for implementation in the public sector in the Fourth Plan period. In the course of the examination of the subject of petro-chemicals by this Committee earlier in 1967-68, Government had indicated that a feasibility study had been prepared by the Oil and Natural Gas Commission according to which the project would be implemented in two phases; the first phase ending by 1971 while the second one ending in 1973. It is however noted that no financial provision has been made for the Barauni Complex upto the year 1974-75 for which estimates of expenditure have been indicated to this Committee.

3.51. Asked to indicate the progress in the implementation of the Project, the Ministry of Petroleum and Chemicals have stated:

> "The Barauni Complex was delineated in 1967 on the basis of qualititive and quantitive availability of naphtha from the Barauni Refinery. This refinery was operating solely on crude oil from Assam and it was expected that it would continue to do so and therefore the quantity and characteristics of naphtha will be same as available in the earlier years. In September 1968, it was decided to allocate Barauni naphtha on an over-riding priority basis to the Fertilizer project to be set up at the same location. The cost of the fertilizer plant is Rs. 55.96 crores.
>
> Differences regarding the tariff for the transport of crude from Assam to Barauni between Oil and Natural Gas Commission and Oil India Limited and the subsequent decision of the Government in December, 1969 to increase the refining capacity in Assam by 1 million tonne meant that crude from elsewhere had to be processed for the expanded capacity of the Barauni Refinery.
>
> In view of the above, it became necessary to carry out detailed experiments and assess the availability of naphtha from the crude which may have to be imported from various sources. It was also necessary to collect data on distillation of various crudes to find out the quantitive

availability of naphtha in order to ascertain whether different alternative product mixes could be utilised to give naphtha of the required specifications.

Since the requirement of difference aromatics for the manufacture of fibre intermediates and other products were assessed to be substantial a Technical Group has been appointed to examine the availability of different feedstocks at different refinery locations both qualitatively and quantitively to recommend setting up of suitable aromatic facilities to cater to the anticipated demands. The possibilities of setting up aromatics complex in Bihar are being examined by this Group.

The evaluation of technology for the Assam Complex and the experience obtained in the Gujarat Complex will assist in the technological work of any aromatic complex.

The decision regarding capacity, investment, time schedules will have to be worked out afresh after the Technical Group's findings are available.

In view of what has been stated (above) and the time that is likely to be taken up to firm up the basic parameters for this unit, a small financial provision only has been made in the Plan period which has been included in the total outlay."

3.52. During evidence, the Addition Secretary, Ministry of Petroleum and Chemicals stated that in the case of the Barauni Aromatic Projects it was "more a technical problem and the Committee that is going into it expects to submit its report within two months. It is only then that the plan for aromatics complex will be included in the Fifth Plan and allocations will be decided. Now, at this stage, Barauni Naphtha, as I explained, has been earmarked to fertilizer use....."

3.53. The Committee note that the Barauni Petro-Chemical Complex which was tentatively approved for implementation during the Fourth Plan period has not made much headway and the possibility of setting up the Complex is still under examination by a Technical Group. The Committee feel that the Technical Group which is now examining the technical aspects of the proposed complex should have been appointed earlier and urge upon the Government to take an expeditious decision in the matter so that the scheme could be completed in the Fifth Plan period.

CHAPTER IV

IMPORT, DISTRIBUTION AND PRICING

A. Imports and Exports

Imports of Petro-chemicals

4.1. Statements showing imports and exports of petro-chemical intermediates during the last five years (1966—71) are at Appendix VI.

4.2. It is seen from the statement regarding imports that the total value of imports of petro-chemicals during the year. 1970-71 was Rs. 8.70 crores. The main items of import during 1970-71 were:

	Rupees crores
Synthetic Fibfes & Fibre Intermediates	3·47
Synthetic Rubber	2·78
Alkyl Dodecyl Benzene	1·03
Plastic Intermediates	1·30

The imports are likely to be materially reduced when the capacities licensed and under implementation will materialise in the course of the next 2-3 years.

Exports of Petro-chemicals

4.3. Petro-chemical intermediates are also being exported from this country in small quantities. The major item of export during 1970-71 was Polyethylene the export of which was during that year, of the order of nearly 8000 tonnes valued at Rs. 2.06 crores. It is stated that the exports during 1969—71 were mainly due to limited indigenous demand *vis-a-vis* availability. As regards the potentiality of export of petro-chemicals, it is stated that, with a view to achieve the economies of scale, the petro-chemical plants being set up are of large size and as such there is a possibility of surpluses of production in the early years of their commissioning leading to exports of products. But such exports, it is stated, would be limited

to a period of 2-3 years till internal demand picks up. However, with the development of the petro-chemical industry, the processing industries producing finished products would receive a fillip and the export of processed goods is likely to increase.

B. Distribution of Petro-chemicals

Availability of Imported Petro-chemicals

4.4. Complaints have been received by the Committee that the correct grade of imported petro-chemical raw materials is not made available to the consumers by the State Trading Corporation in time. Besides, delivery orders are issued at warehouses which are far away from the location of industries. A note furnished by the Ministry of Petroleum and Chemicals in this regard states:

> "In all cases consumers are consulted to find out the exact qualities and grades required by them. This is done through various Advisory Committees set up for this purpose for major products and of which representatives of industries are members. In respect of the items mentioned in the list, no quality complaints from actual users have been received.
>
> Delivery orders are issued on our warehouses at three main ports *viz.*, Bombay|Calcutta|Madras depending on which zone the unit of the consumer is located. In case, of all the petro-chemical raw materials (handled by the State Trading Corporation namely, DMT, Caprolactam, Para| Orthoxylene and Xylene) the question of sales ex-warehouses does not arise as sales are made on high seas."

Regulation of distribution

4.5. It has been suggested to the Committee that the Petro-chemical raw materials of which there is a chronic shortage in the country should be brought under the Essential Commodities Act, their price should be controlled and that these should be made available to priority industries first and then the balance should be made available to non-priority industries. Asked to offer his comments during evidence, the representative of the Ministry of Petroleum and Chemicals stated:

> "Even without price control, it should be possible to ensure suply to genuine priority industries. On the price side,

the Ministry is watching the prices and so far, our impression is that there are no serious aberrations in the prices of petro-chemical products. Large scale production which is going to come into being in the next two and a half years will ensure better availability, and in the meanwhile, some import is being allowed on actual users' basis. The Essential Commodities Act can certainly be used but if the situation requires it. We see no particular difficulty in the next three or four years particularly when the Gujarat complex goes into production. The marginal shortages that may occur in some of the plastics can be made by manipulating the import trade control policy."

Canalisation of Imports

4.6. It has been suggested to the Committee that the imports of petrochemicals and the distribution of the imported material, which is at present being canalised through State Trading Corporation, should be handled by the Indian Petro-Chemicals Ltd., which is expected to know more intimately the technological, packaging and handling problems involved in the import|distribution of these materials. Besides, it would enable the IPCL to build-up a marketing Organisation and gain market experience which would be invaluable when their products are ready for marketing. This arrangement was made earlier also when M|s. National Organic Chemicals (NOCIL) were allowed to import petro-chemical products pending the commissioning of their own plant. On being asked his views on the suggestion during evidence, the representative of the Ministry of Petroleum and Chemicals stated:—

"We are entirely in agreement with the approach and we have moved in the matter. We, in consultation with State Trading Corporation and the Ministry of Foreign Trade are to see how this should be worked out."

4.7. The Committee understand that M/s. National Orgaic Chemicals (NOCIL) were allowed to import petro-chemical materials and to market them in India pending the commissioning of their petro-chemical Project at Bombay. They recommend that on the same principle the import of petro-chemicals and the distribution in the country of the imported materials, which are at present being handled by the State Trading Corporation, should be entrusted to the Indian Petro-Chemicals Ltd.—a Public Sector Undertaking—in order to enable them to gain market experience and build up a marketing organisation by the time their own products are ready for sale.

4.8. The Committee also note that the indigenous production of petro-chemicals is not catching up with the demand resulting in shortages. Besides, its manufacture is confined to only a few units. Government should therefore, in consultation with the manufacturs, devise a system of distribution under which the processing industries, which are mostly in the small scale sector, get their requirements of raw materials direct from the manufacturers. Government should also see that such a distribution system is observed by the manufacturers in actual practice and that the materials are not allowed to be cornerd by intermediaries.

C. Pricing of Petro-chemicals

Increase in Price of Petrochemicals

4.9. The prices of some primary and secondary petro-chemicals have risen sharply over the last three years as the following data indicates:—

	(Rs. per tonne) Price on 1-1-1969	Price on 1-1-1972	
Methanol	950	1350	(Rs. 1450 w.e.f. 18-10-72)
Phenol	3200 2920	3750 3950 3502	(Rs. 3455 w.e.f. 1-11-72)
Ethylene Glycol	3800	4300	
Polyethylene	4194	4792	
L. D.	4150	5400	
Polyethylene H.D.	3797	4329	(Rs. 4326 as on 1-11-72)
Polystyrene (Powder)	4117 (as on 1-1-71)	4282	
Nylon Yarn (20 Danier SD Modipan)	34930 (as on 1-1-71)	37950	

Since these are the raw materials for the down stream units, the price rise has led to an overall increase in the prices of finished goods based on these raw materials.

4.10. Asked to state the reasons therefor and the action taken by Governments to meet the situation and reduce the prices of at least the primary and secondary petro-chemicals, Government have in a written note furnished to the Committee stated the position in regard to Phenol, Ethylene Glycol, Polyethylene, L.D. and H.D. and Methanol as follows:—

PHENOL

The production of this item was started in December, 1968, and price prevailing on 1st January 1969 (Rs. 2,920|- per tonne) was a depressed price because of competition which the Indian firm had to face with imported phenol. The prices stabilised within 3|4 months of the start up of production at Rs. 3,100|- per tonne and was maintained at that level till 1-1-1972 when a price increase to Rs. 3,500|- was effected. The price has been subsequently reduced on 1-11-1972 to Rs. 3,455|- per tonne. The increase in prices has become necessary because of the increase in prices of raw materials (Benzene and propylene prices increased by 20 per cent and 21 per cent respectively) There was also an increase in the price of fuel (27 per cent) electricity (21 per cent) water (6 per cent) and wages to the extent of 50 per cent. These have been reflected in a 13 per cent rise in the price of phenol. In view of the restricted supply of this material and increase in prices, Government has taken action to invite entrepreneurs to set up additional capacity for this item so that the prices would remain under control due to competition.

ETHYLENE GLYCOL

The price has increased from Rs. 3,800|- per tonne in 1969 to Rs. 4,700|- per tonne in January 1971. This has been brought down to Rs. 4,300|- per tonne in 1972. During this period, it has been reported by M|s. NOCIL that their annual operating cost has been increased by Rs. 2.1 crores because of several factors such as increase in price of naphtha from Rs. 89 per tonne to Rs. 114 per tonne,

increase in fuel cost and other raw material and processing cost. The costs have also been high because of low off-take resulting in partial utilisation of the capacity. Government is keeping a watch on the situation.

L.D. POLYETHYLENE

The prices of L.D. Polythylene were reduced in 1969 (ex-works price of Alkali & Chemicals Corporation India exclusive of any duty was Rs. 4,194|- per tonne and ex-work price of Union Carbide was Rs. 4.150 per tonne). This price reduction had taken place because of large imports of polythylene (19,115 tonnes) in 1969. These large imports resulted in accumulation of stocks and distress selling. After the reduction in import of polythylene, the prices again stabilised at original level of Rs. 5,400 per tonne excluding excise duty. However, in view of the increase in excise duty the consumer price increased although the price realised by M|s. ACCI did not change. In case of UCIL there had been a price increase from Rs. 4,700|- per tonne to Rs. 5,400|- per tonne This was because of the increase in naphtha and fuel prices.

H.D. POLYETHYLENE

The ex-factory price (excluding excise duty) has increased from Rs. 3,797 per tonne on 1-1-1969 to Rs. 4,250 on 1-1-1970 Rs. 4,212 on 1-1-1971 and Rs. 4,329|- on 1-1-1972. The current price charged by the firm is Rs. 4,346|- per tonne (as on 1-11-1972). It may be stated in this connection that the price in 1969 was depressed because of substantial imports in 1967-68 (5,534 tonnes) and in 1968-69 (2,532 tonnes). The H.D. Polyethylene was introduced for the first time in the market by M|s. Polyolefin Industries at the beginning of 1969 and the prices stabilised at Rs. 4,212|- per tonne in 1971 after the market had developed and the competition from imported material had become less.....

METHANOL

.....The prices vary depending upon the quantity off-take by different consumers, low prices being charged from the bulk consumers like formaldehyde manufacturers etc.

The Methanol plant at Trombay is designed to produce 100 tonnes of Methanol per day or an annual production of 30,000 tonnes of Methanol. But due to in herent basic design deficiency of the reformer unit which could not generate reformer gas equivalent to

100 tonnes per day on a sustained basis, the foreign contractors for the Methanol plant failed to demonstrate the performance guarantee. The attainable capacity of the reformer section is only 60 tonnes per day equivalent gas for Methanol. The reformer catalyst used by the contractors also failed and did not show a guarantee life resulting in intermittent operation and consequent low production Because of the failure of the contractors to perform the guarantees, F.C.I. have raised necessary claims against the contractors and the matter is now under arbitration.

Because of the deficiency in the plant as stated above, the production of Methanol has been much below the rated capacity. To improve the production, a new standard reformer unit of 125 tonne per day is being installed. To meet the increasing demand of the Methanol to some extent, production of Methanol has been augmented since 1969-70 by diversion of the reformer gas from the Ammonia plant. Because of lower production and also due to continuous increase in the prices of raw materials and utilities, the cost of production of Methanol has been very high at Trombay..... the cost at this level of production is Rs. 1216 per M.T.....

The major consumers of Methanol are the formaldehyde manufacturers and therefore the prices applicable to them are more relevant for comparison. At the time when Trombay started production, the price applicable to formaldehyde manufacturers was Rs. 950 per tonne ex-factory and this price continued till August, 1969, even though the cost of production was very much higher at Rs. 2648 in 1966-67 and Rs. 1389 in 1967-68. In August, 1969, this price was revised to Rs. 1150 per tonne taking into account the landed cost of imported Methanol at about Rs. 1250 per tonne. This revision was also in keeping with the guidelines issued by the Bureau of Public Enterprises in the matter of pricing of monopoly products. Taking into account the increase in cost of production due to prices of raw materials and effect of lower level of production attained due to plant problems and also keeping in view the landed cost of imported Methanol at Rs. 1460 per tonne, the price was increased to Rs. 1300 per tonne from February, 1970. .....The cost of production in 1969-70 was Rs. 1512 per M.T. In July, 1971, the price was again reviewed by F.C.I. and in the light of further increase in cost of production of about Rs. 45 per tonne consequent on increase in cost of Naphtha, the price for the major consumers was increased by Rs. 50 per tonne *i.e.* to Rs. 1350 per M.T. This price continue upto June, 1972 when the price was raised by Rs. 15 per M.T. at all levels to cover the incidence of freight subsidies in excess of Rs. 220 per M.T. absorbed by the F.C.I. With effect from 18th October, 1972, the electricity

tariff for Trombay factory was increased by about 20 per cent on an average and the incidence of the increase on cost of methanol worked out to Rs. 16. Taking all aspects into consideration like consumers' ability to pay etc., F.C.I. Board decided that the maximum incidence of the increased electricity charges may be loaded on the industrial products like Methanol, Ammonia, Nitric Acid, etc. In accordance with the above decision, the price of Methanol was further increased by Rs. 85 per tonne for all levels with effect from 18th October, 1972. The price applicable for the bulk consumers is therefore fixed at Rs. 1450 per M.T. At this price, the return on the gross capital employed at the level of production of 18000 tonnes, works out to only 10 per cent which cannot be considered as high....."

4.11. Dealing with the question of a sharp increase in prices of certain petrochemicals, the representative of the Ministry of Petroleum and Chemicals stated during evidence:

> "The main reasons for increase in prices of Methanol etc. are increase in prices of Naphtha and fuel oil during the last two years. Naphtha price—Ex-refinery, Bombay was Rs. 78.46 per tonne in 1966 as against Rs. 144.12 per tonne in 1972. ....The price of fuel oil has gone up from Rs. 198.82 per tonne in 1970 to Rs. 265.39 per tonne in 1972. These are very steep rises in the price of Naphtha and fuel oil."

The reasons for this price rise in the case of Naphtha and Fuel Oil were, according to him rise in the price of crude oil and the increase in excise duty. Replying to a question whether Government was thinking of restructuring the excise duty on the source material for petrochemicals he stated:

> "At the present moment, our view in the Ministry is that the petrochemical industries including the conversion and fabrication industries still afford enough scope for profit. There is no reason to change the duty structure on this account, we had recently examined the duty structure on fuel for purposes of fertiliser manufacture and the duty has been abolished. Therefore, the fuel oil price for fertiliser production has been brought down very considerably. But in petrochemicals, I do not think that that situation has been reached when we should represent to the Ministry of Finance that the duty should be reduced."

As for the sharp rise in the price of Methanol being produced by the Fertiliser Corporation of India at their plant at Trombay, the representative of the Ministry stated:

> "This may be on account of the higher production costs, the poor performance of the F.C.I. plant and the monopoly character. If there were two other producers of it, the picture may have been different."

4.12. The following data furnished to the Committee indicates that in the cases of certain petrochemicals, the prices have gone down-in a few cases rather sharply:

(Rs. per Tonne)

	Price as on 1--69	Price as on 1-1-71	Price as on 1-1-72
Phthatic Anhydride	5486		3996 4500
	5700		4150
	6250		4500
Synthetic Rubber (S-1500/1502)	5150		4800 4400
P. V. C. Resins (S-65-211&S-70-111)	3700		3100
„ (Cable & shoe Compounds)	3700		3050
Plastics (Suspended Grade Resin)	3650		2850
Nylon Yarn (20 Denier Nirlon)	46280		38180
„ (76 Denioer Nirlon)	44680	38180	
J. K.	39000		34500
Modipon	40450		38850

This is stated to be on account of "competition amongst indigenous manufacturers." It is, however, obvious that there was a considerable margin of profit in the original prices to absorb the sharp fall in prices. During evidence, the representative of the Ministry of Petroleum and Chemicals was asked to state as to how, in the absence of free competition on account of restricted import and industrial licensing policies of Government, and rising demand, did the Government propose to ensure that the existing manufacturers did not combine together and keep the prices unreasonably high.

In reply he stated that in some cases, as for instance Phathalic Anhydride, the prices crashed on account of "distress sales" because Import Trade Policy did not take into account the indigenous production and imports were allowed. In several other cases, for example Nylon Yarn, he said, the prices were brought down by competition on account of increased production. He, however, admitted:

> "There is no doubt at all that in these industries....profit margin is fairly high. Because these industries grow gradually, the earlier units make a lot of profit. As new units come in, the older units are prepared to work on lower profit."

4.13. The Committee feel that since petrochemical intermediates are raw materials for a large number of processing industries, their prices should not be left to be determined by the forces of demand and supply alone. It is admitted that the profit margin in the petrochemical industry is fairly high. The restricted licensing policy observed by Government in the case of petrochemical industry leaves the existing manufacturers in a dominant position. This, coupled with the rising demand for these materials, is bound to keep the prices at an artificially high level at least till such time that newly licensed capacities are actually commissioned which may well take several years from now. Government should therefore take effective measures to ensure that the prices charged for petrochemical intermediates are reasonable and, as far as possible, internationally competitive and that no more than those agreed prices are charged by the manufacturers in actual practice. To facilitate fixation of a reasonable price, Government may have the cost of production analysed in suitable cases by the Bureau of Industrial Costs and Prices, on a priority basis.

4.14. The Committee would also like to point out that import of certain petrochemicals e.g. Phathalic Anhydride and Phenol were allowed even though production capacity was available in the country compelling the indigenous producers to resort to distress sale of their products. The Committee would like Government to examine the matter in detail and inform them of concrete measures taken or proposed to be taken to obviate recurrence of such instances which had the effect of depressing growth of indigenous industry besides resulting in avoidable expenditure of foreign exchange.

NEW DELHI;
March 20, 1973
Phalguna 29, 1894 (*S*).

KAMAL NATH TEWARI,
Chairman,
Estimates Committee.

APPENDIX I

(*See* Para 1.32)

Extract from the Report of the Working Group on Petrochemical Industry (1964)

THE ROLE OF THE PUBLIC SECTOR

(1) Petrochemical manufacture is highly capital-intensive, involving rapidly changing sophisticated know-how which has necessarily to be backed up by continuing research and pilot-plant studies, scientific and technical personnel trained in production and application technology, and dynamic marketing.

The present consumption of a wide variety of petrochemical products is small, partly through limited availability, but is increasing rapidly and the potential demand is enormous. It will, however, take some time to increase production and simultaneously teach fabricators how to convert petrochemicals into marketable products confirming to standard specifications. Plants are highly susceptible to economies of scale and it is clear that for some years to come the size of the market for a wide range of chemicals will justify only one unit which will occupy a dominant position and feed a number of competing fabrication units.

The manufaturing schemes recommended call for major investment in the erection of basic units—Olefins plants—around which there will have to be a complex of other plants to convert the 'buildings blocks' produced into resins, detergents, fibre intermediates etc. Significant economies can be achieved by integrating off-site services (utilities, electricity, distribution, maintenance etc.) and exchange of feed-stocks between the many component units in a complex; further substantial economies can be achieved by integrating a refinery, ammonia plant and petrochemical manufacturing schemes in the new sites to be developed.

(2) The preceding paragraph serves to provide the economic and technical context in which the role of the public sector needs to be judged. The following basic principles are suggested:

(a) The sites suggested for development of major petrochemical activities are such that substantial economies

can be achieved through the integration of refinery, ammonia plant and petrochemical manufacture. Such integration requires the presence of a co-ordinating agency to initiate development, plan ahead, assure fair pricing and also to 'pick-up' certain component units which, if they do not move ahead simultaneously, could hold up the entire complex of plants. The Public Sector could play this role and in certain circumstances may have to do it.

(b) Aromatic and Olefins plants are closely linked with refinery operation. In the sites where the refineries are owned by the public sector, it may be advantageous for such petrochemical plants to be also similarly owned. This would ensure:

(i) that the higher returns anticipated from petrochemical plants compensate for the low price obtained from the supply of feed-stocks from the refinery;

(ii) non-discriminatory pricing of raw materials produced from such petrochemical plants and used by a large number of other public and private sector industries.

(c) In regard to down-stream units:

(i) the public Sector should have significant participation in units whose production caters to the needs of a large number of competing manufacturing units to ensure fair pricing;

(ii) profitability in basic units (BTX and Alefins plants) is vulnerable to the operation of down-stream units. Participation (in varying degrees) in down-stream units can reduce this vulnerability, and ensure a fair share in the higher profitability generally expected in such down-stream units.

The *precise* pattern and extent of participation of the Public Sector judged approriapriate at any particular moment of time would be influenced by—

the overall merits of the processing schemes and availability of process know-how, and availability of foreign exchange.

(3) The ultimate objective of a Public Sector in Petrochemicals should be to evolve a fully integrated organisation with its own competence in—

process evaluation
project design and process engineering
research and pilot plant studies
plant operation
application technology and technical service
distribution and marketing.

Such an organisation can develop only gradually but the objective must be clear at the start so that each step is taken in the right time.

APPENDIX II

(*See* Para 2.15)

Petrochemical projects approved by Government but yet to be licensed (As in July, 1972).

Name of the company	Item	Capacity	Letter of intent No. and date.	Status
1	2	3	4	5
	(A) *Central Public Sector*			
1. Indian Petro-chemicals Corp. Ltd.	Synthetic Rubber	20,000 T/annum	11-7-1972	Investment approval given; foreign collaboration proposals approved and letter of intent issued.
	Detergent Alkylate	30,000 T/annum	6/20/71-Ch. I. Dt. 14-3-72.	Investment approval accorded; foreign collaboration proposals approved. Better of intent issued.
	Polypropylene	30,000 T/annum	3/73/71-Ch. I Dt. 14-3-72.	Investment approval accorded; foreign collaboration proposls approved. Letter of intent issued.
	Acrylonitrile.	24,000 T/annum	6/2/70-Ch. I Dt. 24-5-71	Investment approval accorded; foreign collaboration proposals approved.
	Acrylic Fibre	12,000 T/annum	10,147/71-Ch.I Dt. 14-3-72.	Investment approval accorded; foreign collaboration proposals approved.
	Polyethylene L. D.	40,000 T/annum.	17-11-1971	Investment approval accorded; foreign collaboration proposals approved.
	Ethylene Glycol	20,000 T/annum	6/19/71-Ch. I Dt. 14-3-72.	Investment approval accorded; foreign collaboration proposls approved.

1	2	3	4	5
2. New Corporations to be formed between IPCL and Weavers' Co-operatives.	Polyester filament yarn.	3500/7000 T/annum.	14-3-1972	Investment approval accorded. Letter of intent to issue.
3. FCI for plant in Assam.	Methyl Methacrylate Monomer H. C. N.	6000 3000	3/25/70 Ch. I Dt. 6-5-72	Feasibility report submitted. Foreign collaboration proposals awaited.

(B) *State public sector/joint sector/Private sector*

1. Shriram Vinyl Industries Kota.	P. V. C.	Expansion to 20,000 from 13,200 T/annum.	2/45/64 Ch. I. Dated 25-6-1965.
2. Polyolefin Industries Thana.	Hi D. Polyethylene	Expansion to 30,000 from 20,000 T/annum.	3/26/69 Ch.I dated 4-2-72.
3. National Rayon Corp. Bombay.	Nylon tyre cord.	2200 T/annum	10/16/66 Ch. I Dt. 30-11-66.
4. State Indu. Corp. of A. Pradesh.	Nylon filament yarn.	2,100 T/annum.	10/97/70 Ch. I Dt. 28-12-71.
Mysore .	Do.	2,100 Do.	10/7/71 Ch. I Dt. 29-12-71.
Kerala . .	Do.	2,100 Do.	10/88/70 Ch. I Dt. 29-12-71.
Punjab . .	Do.	2,100 Do.	10/92/70 Ch. I Dt. 29-12-71.
Tamil Nadu	Do.	2,100 Do.	10/107/70 Ch. I Dt. 29-12-71.
Assam	Do.	2,100 Do.	10/99/70 Ch. I Dt. 29-12-71.
Orissa . . .	Do.	2,100 Do.	10/125/70 Ch. I Dt. 29-12-71.
Bihar .	Do.	2,100 Do.	10/162/70 Ch. I Dt. 29-12-71.
Gujarat	Do.	2,100 Do.	10/157/70 Ch. I Dt. 29-12-71.
Haryana	Do.	2,100 Do.	10/137/70 Ch. I Dt. 29-12-71.
Madhya Pradesh .	Do.	2,100 Do.	10/89/70 Ch. I Dt. 29-12-71.
5. Nirlon Synthetics Ltd.	Do.	Exp. by 1320 tonnes/annum.	10/190/70 Ch. I Dt. 29-12-71.
6. Garware Nylons .	Do.	Exp. by 1840 T/annum.	10/124/70 Ch. I Dt. 29-12-71.
7. Modipon Ltd.	Do.	Exp. by 2000 T/Annum.	10/154/70 Ch. I Dt. 4-3-1972.

1	2	3	4	5
8. Garware Nylons .	Polyester filament yarn.	360 T/annum.	10/2/71 Ch. I. Dt. 10-3-1972.	
9. Durgapur Chemicals.	Phthalic Anhydride.	3300 T/annum. (Exp. 6600 to 9900 T/annum. recently issued)	Dated 29-5-1972.	
10. Mysore Petrochecals Bangalore.	Do.	6000 t/annum.	Dated 24-6-70.	
11. Chemidye, Madras	Do.	6000 T/annum.	Dated 19-4-1971.	
12. East Anglia Plastics Calcutta.	Do.	6000 T/Annum	Dated 2-4-71.	
13. Gujarat Industrial Investment Corp.	Methyl Methacrylate	5000 Do.	3(28) 70/Ch. I Dt. 6-5-1971.	
	P. M. M. A.	1500 2000		
	HCN	3300		
14. Kanoria Chemicals	MMA .	5000	3(27)/70/Ch. I Dt. 6-5-1971.	
	HCN	2200		
	PMMA . .	2500		
15. Gannon Dunkerlay	MMA	5000	3/34/70 Ch. I. Dt. 6-5-71.	
	PMMA	2500		
	HCN	3000		

APPENDIX III

(*See* Para 2.28)

Petrochemical projects licensed and under implementation (as on 1-7-1972).

S. No.	Name of the party	Item	Licence No. & date	Licensed capacity in tonnes	Remarks
1	2	3	4	5	6
		A. *Central Public Sector*			
1	IPCL.	DMT	L/19(2)/3/68 Dt. 28-5-1968	24,000	Expected to be in production in 1972-73.
		O-xylene		21,000	
		M-xylene		2,500	
2	IPCL.	Ethylene	L/19(2)/12/72-Ch. I. Dt. 1-6-72.	130,000	Under construction.
		Propylene (Polymer Grade)		35,000	
		Propylene (Chemical Grade)		43,300	
		Butadiene		22,000	
		Benzene		23,600	
3.	FCI, Trombay	Methanol	L/18(1)/1/71-Fertt. II. Dt. 25-3 70	37,500	Expansion for 30,000 to 37,500 approved & under construction.
4	FCI, Haldia.	Methanol	L/18(1)6/71-Ferts. I. Dt. 27-12-71.	41,250	
		(b) *State Public Sector/Joint Sector/Private Sector*			
1	GSFC	Caprolactam	L/19(2)/5-71 Ch. I. Dt. 11-1-72.	20,000	Under erection & expected to the commissioned in 1973-74
2	Ahmedabad Mfg. & Calico Ptg. Bombay.	P. V. C.	L/19(4)/7/67-Ch. I. Dt. 9-6-67	20,000	Expansion from 3600 to 20,000 ton.

1	2	3	4	5	6
3.	Chemicals & Plastics Mettur.	P.V.C.	L/19(4)/10/70-Ch. I. Dt. 30-1-70.	20,000	Exp. from 6000 to 20,000 (13500 already instd.)
4.	Plastic Resins & Chemicals, Tuticorin.	P.V.C.	L/19(4)/7/61-ch. I. Dt. 21-6-61.	12,000	
5.	Hindustan Polymers Ltd.	Styrene	L/19/4(2) 61-Ch. I. Dt. 15-2-61.	10,000	
6.	Shree Synthetics Ujjain.	Nylon filament yarn.	L/23/5/10/68-Ch. I. Dt. 1-8-68.	1,100	
7.	Stretch Fibres, Bombay.	Nylon bilament yarn.	L/23/5-2-66 Ch. I. dated 16-5-66.	540	
8.	Guptalon Ltd. Ludhiana.	Do.	L/23/5-17/71 Ch. I. dated 15-3-71.	1,000	
9.	Gujarat Polyamides	Do.	L/23/5/M-192 60 dated 16-2-60	1,800	
10.	Arthur Import & Export Bombay	Do.	L/23/5/M/193 60 Dt. 19-2-60.	1,100	
11.	Garware Nylons .	Do.	L/23/5/14/70-Ch. I. Dt. 24-10 70	2,000	Exp. from 756 to 2000 tons under implementation.
12.	Modipon Ltd. .	Do.	L/23/5/11/70-Ch. I. Dated 28-3-70		Exp. from 1800 to 2200 tonnes.
13.	Shriram Fibres Ltd'	Tyre Cord.	L/23/5/19-71 Ch. I. dated 22-1-72.	2,000	
14.	Indian Organic Chemicals	Polyester Staple Fibre	L/23/5/12/70 Ch. I. Dt. 22-4-70	6,100	
15.	Ahmedabad Mfg. & Calico Pntg. Mills	Do.	L/23/5/16/70 Ch. I. Dt. 24-10-70	6,100	
16.	Swadeshi Polytex	Do.	L/23/5/15/70-Ch. I. Dated 7-10-70	6,100	
17.	Chemicals & Fibres (I) Ltd.	Do.	L/23/5/18/71 Ch. I. Dt. 3-2-71.	6,100	Exp. from 4,500 to 6,100 tonnes.
18.	J. K. Synthetics	Acrylic fibre.	L/23/5/63/Tex (D) 64 Dt. 9-3-64.	4,000	

1	2	3	4	5	6
19.	Assam Petro-Chemicals Ltd.	Methanol	L/19(2)/6/71-Ch. I. Dt. 10-2-71	7,000	
20.	Herdillia Chemicals Ltd.	Phenol	L/19(2)/2/65 Ch. I. Dt. 22-3-65	15,000	Exp. from 10,000 to 15,000 to be implemented.
21.	Durgapur Chemicals Ltd.	Phenol	L/19(1)/41/No Ch. I/61 Dt. 5-5-61	6,600	Exp. from 3300 to 6600 to be implemented.
22.	Durgapur Chemicals	Phthalic Anhydride.	L/19(1)/41/NU Ch 1/61 Dt. 5-5-61	6,600	Exp. from 3300 to 6600 to be implemented.
23.	Suhrid Geigy	Do.	L/19(2)4/69 Ch. III. Dt. 5-11-69	6,000	Exp. from 3000 to 6000 tonnes under implementation.

APPENDIX IV

(*See* para 2·34)

Licensed capacity, installed capacity and production in respect of petro-chemical projects in production during 1969, 1970 *and* 1971

L/C—Licensed capacity

I/C—Installed capacity

Prod=Production

(Figures in Tonnes)

Unit/Item	1969			1970			1971		
	L/C	I/C	Prod.	L/C	I/C	Prod.	L/C	I/C	Prod.
1	2	3	4	5	6	7	8	9	10
A—CENTRAL PUBLIC SECTOR									
1. *Indian Oil Corportation* :									
(i) Benzene	33000	33000	6521	33000	33000	14306	33000	33000	20620
(ii) Toluene [By-product(i)] . .	14000	14000	1407	14000	14000	2157	14000	14000	3167
2. *F.C.I. Bombay* :									
(i) Methanol	30000	30000	12227	37500	30000	21280	37500	30000	23310
B—STATE PUBLIC SECTOR/JOINT SECTOR/PRIVATE SECTOR									
1. *Durgapur Chemicals* :									
(i) Phenol	6600	3300	433	6600	3300	716	6600	3300	503

1	2	3	4	5	6	7	8	9	10
(*ii*) Phthalic Anhydride	6600	3300	1615	6600	3300	1288	6600	3300	790
2. *NOCIL* :									
(*i*) Ethylene	60000	60000	33772	60000	60000	36459	60000	60000	46768
(*ii*) Propylene (Ch. Gd.)	35000	35000	145	35000	35000	1302	35000	35000	22146
(*iii*) Benzene	14000	14000	9070	14000	14000	10026	14000	14000	12147
(*iv*) Butadiene	7200	7200	3204	7200	7200	4546	7200	7200	5480
(*v*) Ethylene Oxide	12000	12000	1173	12000	12000	1403	12000	12000	5112
(*vi*) Ethylene Glycol .	10000	10000	2997	10000	10000	4998	10000	10000	3807
(*vii*) Di-ethylene Glycol .	600	600	412	600	600	441	600	600	708
(*vii*) Polyethylene Glycol .	1000	1000	905	1000	1000	533	1000	1000	548
(*ix*) Ethylene Dichloride . .	50000	50000	23752	50000	50000	27149	50000	50000	38002
(*x*) PVC Resins .	20000	20000	12016	20000	20000	15339	20000	20000	19964
(*xi*) Ispropyl Alcohol	1500	1500	1810	1500	1500	1594	1500	1500	1816
(*xii*) Acetone . . .	11000	11000	2973	11000	11000	2790	11000	11000	6426
(*xiii*) Diacetone alcohol . .	2800	2800	1367	2800	2800	1482	2800	2800	1988
(*xiv*) M. I. Keton	3700	3700	1325	3700	3700	1131	3700	3700	1279
(*xv*) Butanol	8000	8000	792	8000	8000	2145	8000	8000	3345
(*xvi*) 2-ethyl Hexanol .	8000	8000	1348	8000	8000	4403	8000	8000	7514

3. *Union Carbide India Ltd.*									
(1) Ethylene	15000	15000	6697	15000	15000	15609	15000	15000	19770
(2) Butyl alcohol	2950	2950	1467	2950	2950	875	2950	2950	1173
(3) 2-Ethyl Hexanol	1600	1600	924	1600	1600	1977	1600	1600	1456
(4) Benzene	4000	4000	4645	4000	4000	4122	4000	4000	5227
(5) Polyethylene (L.D.)	10000	9075	10215	10000	9075	12237	10000	9075	15106
4. *Herdillia Chem.*									
(1) Phenol	10000/15000	10000	6717	10/15000	10000	8088	10/15000	10000	9355
(2) Acetone	6000/9000	6000	4031	6/9000	6000	4919	6/9000	6000	5606
(3) Diacetone alochol	5000	2000	644	5000	2000	936	5000	2000	1173
(4) Phthalic Anhyiride	6000	6000	2949	6000	6000	3479	6000	6000	3490
5. *Poly. Chem.*									
(1) Polystyrene	10000	10000	7330	10000	10000	7952	10000	10000	9505
(2) Styrene	14000	14000	8530	14000	14000	10336	14000	14000	12517
(6) *Suhrid Geigy*									
(1) Phthalic Anhydride	6000	3000	1937	6000	3000	2489	6000	3000	1713
7. *Polyolefins Ltd.*									
(1) H. D. Polyethylene	20000	20000	17338	20000	20000	18346	20000	20000	24059
8. *Alkali and Chemicals Corp., of India Ltd.*									
Polyethlene (L.D.)	10000	10025	8485	10000	10025	10978	10000	10025	12391

1	2	3	4	5	6	7	8	9	10
9. *Hindustan Polymers* .									
(1) Polyetyrene	7500	7500	1415	7500	7500	756	7500	7500	1603
(2) Styrene .	10000		..	10000	..		10000	..	..
10. *Chemicals and Plastics Ltd.*									
(1) P. V. C. .	6000	6000	6222	20000	6000	6186	20000	13500	7589
11. *Shriram Vinyl & Chemicals* :									
(1) P. V. C.. . .	13200	13200	11745	13200	13200	12972	13200	13200	10788
12. *Ahmedabad & Calico Ptg.*									
(1) P. V. C. . . .	20000	3300	4406	20000	3300	4055	20000	4500	4560
13. *J. K. Syntheticss* :									
(1) Nylon Filament Yarn .	1760	2560	2992	1760	3200	3288	1760	3200	3445
(2) Nylon Tyre cord/Ind. Yarn .	1000	360	81	1000	360	68	1000	360	39
(3) Nylon staple fibre	1800	..	..	1800	..	..	1800	1800	20
(4) Acrylic fibre	4000	..	..	4000	540	192	4000	540	73
(5) Polyester Filament	360	360	42	360	360	263	360	360	279
14. *Nirlon Synthetics* :									
(1) Nylon Fil. yarn .	2160	2160	1961	2160	2160	2237	2160	2160	2581
(2) Nylon Tire cord/Ind. Yarn	1320	..	..	1320	..	..	1320	1320	498
(3) Polyester Fil.	360	360	162	360	360	311	360	360	283

15. *Modipon* :									
(1) Nylon Fil. yarn	1800	1440	2124	2200	1800	2463	2200	1800	2386
16. *Garware* :									
(1) Nylon Fil. Yarn	756	756	693	2000	1095	900	2000	1095	1014
17. *Century Enka* :									
(1) Nylon Fil. Yarn	756	756	136	756	756	919	756	756	909
18. *Chem. and Fibres* :									
(1) Polyester Staple Fibre	4500	5000	5738	4500	5600	5333	6100	5600	5730
19. *Synthetics and Chemicals* :									
(1) Synthetic Rubber . . .	30000	30000	24588	30000	30000	30339	30000	30000	33024

APPENDIX V

(*See* Para 2.35)

Statement showing particulars of cases where the under-utilisation of installed capacity has been 75 per cent or less.

Name of the Unit	Item	Installed capacity	Year and extent of utilisation	Tonnes	Percentage	Reasons for underutilisation
1. Indian Oil Corporation Ltd., Baroda.	(*a*) Benzene	33,000 T/Annum	1969	6,521	20%	Low off take due to delay in setting up benzene based units (caprolactum, BHC styrene, etc.). Due to non-availability of benzene from steel plants the demand has improved. Utilisation in 1970 is upto installed capacity.
			1970	14,306	43%	
			1971	30,620	62%	
	(*b*) Toluene	14,000 T/Annum	1969	1,407	10%	Low demand due to limited conversion capacity for toluene based end-product (demand for Defence explosives, etc. was lower than anticipated). Delay in end-product manufacturing capacity being set up TDI, Nitro-benzene, Nitro-Toluene etc.
			1970	2,157	15%	
			1971	3,167	23%	
2. Fertilizer Corpn. of India Ltd.	Methenol	30,000 T/Annum	1969	12,227	40%	Plant problems (unsuitable catalyst, converted design, etc.). The problems have been resolved and fresh reformers having 37,500 tonnes/annum are being erected to utilise in full the distillation plant capacity. Improved catalysts are now being used.
			1970	21,280	71%	
			1971	23,310	76%	

3. Durgapur Chemicals	(*a*) Phenol	3,000 T/Annum	1969	433	14%	Labour troubles resulting in low production, plant shut-downs due to power failures, bad plant maintenance, heavy corrosion of equipment due to intermitant operations and Durgapur Bund.
			1970	716	24%	
			1971	503	17%	
	(*b*) Phthalic Anhydride	6,600 T/Annum	1969	1,615	25%	Labour troubles, plant shut-downs due to power failures, bad maintenance, poor catalyst performance, and low demand due to large imports.
			1970	1,288	19%	
			1971	790	12%	
						The plant has been recently checked by the foreign collaborates and the catalyst has been changed and it is expected to operate at improved capacity levels. Demand is also picking up due to import restrictions recently imposed.
4. NOCIL	(*a*) Ethylene Glycol.	10,000 T/Annum	1960	2,997	29%	Low demand due to daely in commissioning of consumer units (polyester staple fibre, polyester filament yarn, film etc.), limited markets for other and-uses (anti-freeses, solvent, brake fluids, etc.).
			1970	4,998	49%	
			1971	3,807	38%	
	(*b*) Ethylene Oxide	12,000 T/Annum	1969	1,173	9·8%	Low demand for products based on ethylene oxide (ethylene glycol, polythlene glycol, surfactants, etc.)
			1970	1,403	12%	
			1971	5,115	43%	
	(*c*) Ethylene Di-Chloride	50,000 T/Annum	1969	23,752	47%	This is an intermediate mainly used for manufacture of V.C. The production was low in the first two years because of limited markets.
			1970	27,149	54%	
			1971	38,002	76%	

Name of the Unit	Item	Installed capacity	Year and extent of utilisation	Tonnes	Percentage	Reasons for underutilisation
	(*d*) Polythylene glycol	1,000 T/Annum	1969 1970 1971	905 633 588	90% 63% 58%	Limited markets for solvents, lubricants and restricted use of this material in cosmetics and pharmaceutical industries.
	(e) P.V.C.	20,000 T/Annum	1969 1970 1971	12,016 15,339 19,960	60% 77% 98%	Low demand and initial production problems till 1969.
	(*f*) Acetone	11,000 T/Annum	1969 1970 1971	2,973 2,790 6,420	27% 26% 60%	Low demand due to the limited conversion capacity for industries based on Acetone, limited market as solvent.
	(*g*) Disacetone Alcohol	2,800 T/Annum	1969 1970 1971	1,367 1,482 1,980	49% 53% 45%	Low demand, which is gradually picking up.
	(*h*) M. I. Ketone	37,000 T/Annum	1969 1970 1971	1,325 1,131 1,275	36% 30% 35%	Low demands for solvents and additives due to Limited development of paints and other solvent based industries.
	(*i*) Butanol	8,000 T/Annum	1969 1970 1971	792 2,145 3,345	10% 27% 32%	Low demand for Butanol and its esters in paints, synthetic resins and other industries. This is a co-product obtained in the manufacture of 2-ethyl haxanol. The firm have resently modified their process to reduce the production of Butanol.

	(J) 2-Ethyl Hexanol	8,000 T/Annum	1969	1,348	17%	Low demand in 1969-70 due to imports and lower levels of market for 2-ethyl hexanol and plasticisers.
			1970	4,403	55%	
			1971	7,515	95%	
5. Union Carbide	(*a*) Butanol	2,950 T/Annum	1969	1,467	50%	Same as 4(*i*).
			1970	875	30%	
			1971	1,173	40%	
	(*b*) 2-Ethyl Hexanol	1,600 T/Annum	1969	924	57%	Same as 4 (j).
			1970	1,977	123%	
			1971	1,456	91%	
6. Herdilla Chemicals	(*a*) Phenol	10,000 T/Annum	1969	6,717	67%	Lower demand for due to limited market various end-products; imported material was available in 1969.
			1970	8,088	82%	
			1971	9,355	94%	
	(*b*) Acetone	6,000 T/Annum	1969	4,031	67%	Same as 4(f).
			1970	4,919	82%	
			1971	5,606	94%	
	(*c*) Di-acetone alcohol	2,000 T/Annum	1969	644	32%	Same as 4(g).
			1970	936	46%	
			1971	1,173	58%	
	(*d*) Phthalic anhydride	6,000 T/Annum	1969	2,949	50%	Limited market due to large imports under export replenishment scheme and plant operational problems import policy has been revised and the off take is expected to improve considerably leading to better capacity utilisation.
			1970	3,749	62%	
			1971	3,490	58%	
7. Suhrid Geigy	Phthalic anhydride	3,000 T/Annum	1969	1,937	615%	Same as 6(d).
			1970	2,489	83%	
			1971	1,713	57%	

Name of the Unit	Item	Installed capacity	Year and extent of utilisation	Tonnes	Percentage	Reasons for under utilisation
8. Hindustan Polymers	Polystyrene	7,500 T/Annum	1969	1,415	19%	Plant operation problems; raw material difficulties due to delay in commissioning of their own styrene plant and problems in marketing polystyrene due to competition.
			1970	756	10%	
			1971	1,603	21%	
9. Nirlon Synthetics	(*a*) Nylon tyre cord	1,320 T/Annum	1971	498	33%	Plant operational problems, lower markets due to stocks of imported material, production started in June, 1971.
10. J. K. Synthetics Ltd.	(*a*) Nylon tyre cord	360 T/A	1969	81	22%	This was an experimental plant mostly for test marketing of tyre cord and industrial yarn. The main tyre cord was set up only in 1972.
			1970	68	19%	
			1971	39	10%	
	(*b*) Nylon staple fibre	1,800 T/Annum	1971	20	1%	Difficulties in marketing due to high level of excise duties on this fibre.
	(*c*) Acrylic fibre	540 T/Annum	1969	192	35%	This production has been obtained from a pilot plant which was set up to ascertain the production conditions and for test marketing of the product. The main plant has yet to be set up.
			1970	73	14%	
	(*d*) Polyester filament yarn	360 T/Annum	1969	42	12%	Low production in 1969 due to initial operational problems. Production started in 1969 (only partial operation).
			1970	263	73%	
			1971	279	77%	

APPENDIX VI

(*See* Para 4.1)

Imports of major Petro-chemicals in India during the years 1966-67, 1967-68, 1968-69, 1969-70 *and* 1970-71.

Quantity: Tonnes; Value : Rs. lakhs

Sl. No. & Items	1966-67		1967-68		1968-69	
	Qty.	Value	Qty.	Value	Qty.	Value
1. Acetone	2096·40	31·33	2171·52	48·74	437·84	9·27
2. Alkyl/Dodecyl Benzene	1483·27	21·39	1615·84	29·51	4005·33	70·61
3. Ethylene Glycol	2065·46	42·21	2716·03	61·66	2382·08	44·26
4. Methyl Alcohol	5221·34	42·92	4748·47	44·44	5395·42	32·45
5. Acrylic Resin/ Polyacrylate and Polymethyl Methacrylate Moulding Powder	1077·99	59·45	2231·12	103·79	2408·53	92·57
6. Polythylene Resin Compound (H.P.)	263·53	7·99	5956·40	152·50	19115·35	332·84
7. Polyethylene Rasin Compound (L.P.)	1761·79	53·91	5534·20	157·10	2532·59	51·64
8. Polypropylene	792·55	23·77	1424·71	41·95	1068·55	29·52
9. Polystyrene Moulding Powder	576·17	14·30	1919·78	43·97	1777·71	38·10
10. Polyvinyl Chloride Comp./P.V.C. Resins	2419·21	78·98	4750·76	140·87	4514·28	128·54
11. Acrylic Fibre/ Tops	153·64	19·75	299·50	30·65	326·63	25·58
12. Acrylic Filament Tow for Fibre	..	..	31·13	3·10	91·75	6·77
13. Polymide Fibre	230·31	26·71	361·26	36·27	106·38	9·00
14. Polyester Fibre	321·55	34·58	364·12	37·86	572·64	45·96
15. Polypropylene Fibre	0·71	Neg.	..	..	..	..
16. Other fibres—carded-not-carded, combed	122·23	8·95	59·54	6·07	318·83	20·49
17. Synthetic Rubber	5857·14	235·41	2852·24	149·67	2398·66	138·57

Sl. No. & Items	1969-70		1970-71		INDIGENOUS CAPACITY T/Annum	
	Qty.	Value	Qty.	Value	In operation	Licensed/ Approved (under Imp.)
1. Acetone	0·31	0·02	22·6	2·00	21500	
2. Alkyl/Dodecyl Benzene	3961·28	68·24	6995·05	104·25		30000
3. Ethylene Glycol	473·66	13·22	23·50	1·00	10000	20000
4. Methyl Alcohol	6·68	0·98	995·10	10·05	33000	56000
5. Acrylic Resin/ Polyacrylate and Polymethyl Methacrylate Moulding Powder	1223·38	67·88	1033·75	52·32		20000
6. Polyethylene Resin Compound (H.P.)	2069·12	40·35	309·76	9·80	26-27000	80000
7. Polyethylene Rasin Compound (L.P.)	288·75	6·42	37·22	1·76	20000	10000
8. Polypropylene	903·17	29·23	603·09	21·03		30000
9. Polystryene Moulding Powder	388·12	9·96	174·86	5·23	17500	
10. Polyvinyl Chloride Comp./P.V.C. Resins	1014·62	40·87	699·73	39·70	51000	41000
11. Acrylic Fibre/ Tops	15·90	1·37	195·27	16·18		16000
12. Acrylic Filament Tow for Fibre	28·98	2·53	38·97	3·77	..	..
13. Polymid fibre	150·31	12·98	117·20	11·00	15000	33000
14. Polyester fibre	1223·40	97·34	3097·80	227·00	5000	31500
15. Polyoropylene Fibre						5000
16. Other fibres carded, not carded, combed	327·17	27·72	1500·31	87·85		..
17. Synthetic Rubber	4148·67	214·96	5008·49	277·54	30000	20000

Export of Selected Petrochemical Items during 1968-69, 1969-70 and 1970-71

(Value in Rs. lakhs)
(Qty. in Tonnes)

	Items	1968-69		1969-70		1970-71	
		Qty.	Value	Qty.	Value	Qty.	Value
1.	P.V.C.	1591·1	21·6	274·3	3·0	200·0	3·0
2.	Polyethylene (LD & HD)	5840·3	120·4	12715·1	301·0	7912·6	206·0
3.	Polystyrene	26·1	0·6	641·1	12·0	911·0	20·0
4.	Nylon Filament (Polyamide Fibre)	6·4	0·3	..	..	..	..
5.	Ethylene Glycol	4·2	0·1	512·1	6·0	498·6	4·0
6.	Acetone	84·2	0·9	1004·2	5·0	400·0	4·0
7.	Methanol (Methyl Alcohol)	50·9	0·6	455·1	3·0	840·2	11·0
8.	Phthalic Anhydride	10·0	0·3		..		
9.	Plastic Processed Goods	..	398·0	..	490·0		579·0
	TOTAL	..	542·8	..	820·0	..	827·0
	Total all chemicals (Sec. 5)	..	2370·3	..	3030·1	..	3636·2

Source: 1. Monthly Statistics of Foreign Trade of India (Items 1 to 19)
2. The Plastics & Linoleum Export Promotion Council (Item 20)

APPENDIX VII

Statement showing Summary of Recommendations/Conclusions contained in the Report

S. No.	Reference to Para No. in the Report	Summary of Recommendations/Conclusions
1	2	3
1	1.12.	The Committee are constrained to observe that the production in India of plastics, synthetic fibres and synthetic rubber, which are based on petrochemicals, is pitiably low. The rate of growth of production and consumption of petrochemical based goods in other countries suggests the importance being attached all the world over to this field of industrial activity. In India the importance of petrochemical was realised very late and until recently the petrochemical raw materials were being entirely imported. Even after the importance of petrochemical industry came to be appreciated, the development of the industry has not been as speedy as it should have been. The Committee stress that Government should take concerted steps to accelerate the development of this promising industry which can contribute significantly towards industrial growth and generation of employment opportunities.
2	1.13.	The Committee regret that the Fourth Plan document failed to lay down the capacity and production targets for basic and primary petrochemicals while it provided for some intermediate and tertiary products. They are informed that the demand parameters for these materials were available to the Ministry of Petroleum and Chemicals and were kept in view while licensing

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		industrial capacities during the Fourth Plan period. The Committee, however, feel that firm targets for all the petrochemicals should have been laid down in the Plan document itself so that these were known to the people. The Committee recommend that in formulating the Fifth Plan, a detailed and systematic study should be made of the industry and physical and financial targets worked out for the primary, secondary and tertiary petrochemical materials. These should be included in the Plan document itself so that the public is aware of the broad features of the production plan for the Fifth Plan period.
3	1.14.	The Committee note the assurance given by the representative of the Planning Commission that detailed studies made by the Planning Commission or its Committees/Study Groups on the basis of which the Fifth Plan targets and related provisions are made, would be considered for publication in the form of a compendium volume of the Fifth Plan document for information of public and hope that it would be implemented.
4	1.15.	*The Committee note that the list of Core Industries in the field of petrochemicals is not sufficiently realistic. They feel that the Plastic intermediates, *i.e.* P.V.C., Polyethylene, Polystyrene and Polypropylene industries, and some of the organic petrochemicals are also of a basic nature as they produce raw material for a large number of processing units in the country. They, therefore, recommend that Government may examine the desirability of including these industries in the Core Sector so that they receive due priority in the matter of development.
5	1.17.	The Committee do not quite understand why the industrial units producing Thermoplastic Resins had to wait for more than 9 months before the relaxation in licensing policy to secure

*At the stage of factual verification. Government have stated that the list of Core Industries has been revised *Vide* the Ministry of Industrial Development Press Note dated 2nd February, 1973 to include *Inter-alia* Synthetic Resins and Plastics and Synthetic Detergents.

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		fuller utilisation of installed capacity, announced by Government in January, 1972, was made applicable to them. The delay in taking the decision shows that either the Ministry of Petroleum and Chemicals were so long not aware of the gap between the demand and production of these petrochemicals so as to appreciate the urgency of augmenting production in that field or that they were doubtful of its economic importance. The Committee feel that perhaps the shortage of these resins being experienced this year would have been considerably less if the relaxations were made applicable to them earlier.
6	1.21.	The Committee are greatly disappointed to observe that the rate of growth of petrochemical industry in the Core Sector has been nil during the first three years of the Fourth Plan period. In respect of DMT, Caprolactam and Acrylonitrile, which are synthetic fibre intermediates, no capacity had been installed upto 1971-72 while the Plan originally envisaged sizeable production of these materials at the end of the Plan period. In the case of Synthetic Rubber, by 1971-72, even the approved capacity was much below the production target for 1973-74 and that too remained to be installed. The capacities for DMT, Acrylonitrile and Synthetic Rubber are licensed to Indian Petrochemical Corporation—a Public Sector Undertaking and are a part of the Gujarat Aromatic|Olefins Projects. The capacity for Caprolactam is licensed to Gujarat State Fertilizer Company—a Gujarat State Joint Sector Undertaking. The Committee have subsequently in Chapter III of this report commented upon the delay in the commissioning of these projects. Here, they would like to point out that on account of non-realisation of the production targets in respect of these industries, which produce raw material for the down-stream units, the growth of processing industries, which being

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		largely in the small scale sector are employment-intensive, has been stunted and the pressure on foreign exchange required for imports of raw material for feeding the existing down-stream units is unnecessarily maintained.
7	1.22.	The Committee also find that as a result of the mid-term appraisal of the progress of the Fourth Plan achieved upto 1971-72, the Planning Commission has scaled down the capacity and production targets for the Plan. The Committee are averse to the scaling down of the targets without the reasons therefor being fully explained. The Committee see no reason why the target in this field, vital to industrial growth and generation of employment potential, could not be achieved by integrated and detailed planning in advance and timely concerted measures in implementation thereof. While the Committee underline the need for laying down the plan targets on a more realistic basis, they consider that slow progress of the Plan should attract timely notice and, instead of resorting to the easy course of scaling down the targets, the implementation machinery should be geared up for redoubled effort to improve upon the past performance so as to achieve, in the remaining years of the Plan, the targets originally laid down.
8	1.23.	The Committee desire that Government should make an intensified effort to achieve maximum progress in the development of the petrochemicals industry during the remaining period of the Fourth Plan so as to reach as nearly as possible the targets set down in the plan. For the Fifth Plan, the Committee trust, the targets of capacity and production would be laid down in detail preferably year-wise, keeping in view the vital importance of these materials for industrial growth and generation of employment opportunities.

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9	1.26.	The Committee consider that the long term remedy for shortage of industrial Alcohol does not lie in discouraging the setting up of petro-chemical units based on Alcohol but in finding ways and means for increasing the availability of Alcohol for industrial purposes. They regret that the Ministry of Petroleum and Chemicals, which is responsible also for molasses, did not take adequate measures in time to increase the availability of molasses for the production of industrial alcohol. They feel that if proper attention had been paid to the pricing and storage of this commodity, and a statutory allocation made for the production of industrial alcohol, it would have gone a long way in meeting the demand for the production of industrial Alcohol.
10	1.27.	The Committee would also like to reiterate in this connection the recommendations made by them earlier in Paragraphs 1.75 and 1.76 of their 27th Report (5th Lok Sabha) on Sugar and Vanaspati that the price of molasses used for the production of industrial alcohol should be controlled and that the control of molasses should be transferred from the Ministry of Petroleum and Chemicals to the Ministry of Agriculture (Department of Food).
11	1.28.	As regards the shortage of Thermoplastic Resins, which are being used as raw material by a large number of industrial units mostly in the Small Scale Sector, the Committee feel that the situation could have been avoided by a more realistic projection of demand and timely action to meet the impending gap between demand and availability. They recommended that Government should take energetic steps to increase the production of Thermoplastic Resins by speeding up the implementation of the existing licences issued or, if necessary, by licensing more capacity.

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12	1.35.	The Committee have, while examining the progress of the Gujarat Olefins Project in a subsequent paragraph, commented upon the shift in the policy of the Government in regard to the setting up of the down-stream units which was partly responsible for the delay in the commissioning of the Naphtha Cracker on which the development of the petrochemical industry largely depends.
13	1.36.	The Committee are aware of the general uncertainty in regard to the role of the public private sector that has persisted in the Fourth Plan, in the petrochemical field and they feel that it has arisen precisely because, as admitted by the representative of the Government before them during evidence, Government had not taken a "firm" decision as to whether the petrochemical industry would be in the public or private sector and the decisions taken in this regard have been on *ad hoc* basis. The Committee recommend that Government should clearly state the role of the Public Sector in the development of petrochemical industry during the Fifth Plan period keeping in view the overall plan targets to be achieved, the financial resources available for investment in the public sector in terms of plan priorities, technological resources, and feasibility of implementation of the programme in the public sector during the plan period. Government should also precisely define the areas in the field of petrochemicals where the participation of the private sector would be permissible during the Fifth Plan period and publicise the same for general information so as to attract competitive proposals for the development of the industry in the shortest time.
14	2.12.	The Committee are unhappy to note that, as on 31st October, 1972, out of 138 licence applications pending with the Ministry of Petroleum and

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		Chemicals, as many as 83 were more than one year old. The plea that consideration of applications for licensing of Industrial Units in the Petro-chemical field takes a longer time in the Ministry of Petroleum and Chemicals because of some special considerations, namely, selection of proper process, availability of raw material and larger number of applications, is not convincing. The selection of proper process and availability of raw material are normal considerations on which all licences are issued while it is not only in the petrochemical field that the number of licence applications are large. The Committee have a feeling that the main cause for delays in processing of licensing applications by the Ministry of Petroleum and Chemicals, apart from the dilatory procedures, is that the Ministry is involving itself rather too much in the technical appraisal of the cases, which is really the function of the D.G.T.D.
15	2.13	The Committee are greatly concerned that in the field of petro-chemicals, where there has been phenomenal technological development elsewhere, the mere process of examining the licensing applications and bringing them up before the Licensing Committee should have been subjected to such excessive and persistent delays. The Committee would like to point out that, as admitted in the course of evidence, D.G.T.D. which is the technical wing of the Government, has the requisite expertise in the field of petro-chemicals and that the Licensing Committee itself has representatives from all the Ministries/Departments and the other bodies concerned with the issue of industrial licences. The Committee, therefore, feel that the entire procedure adopted for processing of applications in the Ministry of Petroleum and Chemicals needs to be reviewed at the highest level to avoid duplication and to

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		lay down realistic time schedules, so that all the processes involved in the issue of industrial licences are completed in the shortest time, contributing to industrial growth and generation of employment opportunity. The Committee would also like Government to lay down at the highest level, clear guidelines regarding allocation of the units in the public or private sector, size of the units, their location etc., so as to facilitate the work of processing of applications for the issue of licences.
16	2.14	The delays in the disposal of licence cases in the Ministry of Petroleum and Chemicals also show that the existing system of keeping a watch on the progress of cases is not adequate. The system should be improved upon with a view to make it really effective.
17	2.19	It is admitted by the representative of the Ministry of Petroleum and Chemicals during evidence before the Committee that it is taking a longer time to process and finally approve the proposals for foreign collaboration from the parties who have been issued letters of intent for setting up petro-chemical units. This is sought to be justified on the ground that the petro-chemical industry involves import of sophisticated technology and equipment and firming up of foreign credits takes a long time. The Committee feel that the reasons given are not sufficiently convincing as these can be advanced for import of modern technologies and equipment in any field. Besides, the Committee find from the details of the two inordinately delayed cases furnished by Government that unconscionable delays have taken place not for the reasons stated above but on account of the indecisive policy regarding import of technology and equipment and

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		lack of foresight for which responsibility lies squarely with the Ministry of Petroleum and Chemicals.
18	2.20	The Committee would like the Ministry of Petroleum and Chemicals to clearly enunciate its policy and lay down suitable guidelines for the information of the general public in regard to import of technology and equipment in the petro-chemical field so that decisions in regard to foreign collaboration cases could be taken without undue delay. They also feel that it would go a long way in cutting out delays if at the time of inviting proposals for setting up an industry, a firm indication is given, after consultation with the Ministry of Finance, of two or three sources from which credit could be made available for the industry so that the entrepreneurs have a choice in negotiating for most competitive offers and Government also have a choice in accepting it and it should be the responsibility of Government to see that the credits originally indicated are available to the licensee at the appropriate time.
19	2.24	While the Committee do not under-estimate the importance and immense possibilities of indigenous research and development in the field of petro-chemicals to catch up with modern technological developments elsewhere, they would like Government to examine objectively whether it would not be far more economic if the basic sophisticated technology and equipment is bought from abroad on a one-time basis and then duplicated, improved upon and adapted to our requirements through indigenous research effort.
20	2.27	The Committee recommend that, in the interest of uninterrupted production, Government should consider the feasibility of import licences

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		being issued for the requirements of spare parts of Industrial Units for a period beyond one year at a time.
21	2.33	The Committee are distressed to note that a large number of industrial licences issued for setting up industrial capacities in the petrochemical field have remained unimplemented for a number of years. The reason advanced by the Ministry of Petroleum and Chemicals for non-implementation in most cases is again the delay in firming up foreign credits for the licensed projects. The Committee have separately commented upon the procedure for allocation of foreign exchange for the petrochemical projects and made certain recommendations. At this stage, the Committee would only stress that the Ministry of Petroleum and Chemicals being the Ministry responsible for the development of the petrochemical industry, should see that the industrial capacities licensed are speedily implemented and commercial production commences at the earliest possible time.
22	2.39	The Committee are constrained to observe that in a large number of cases the installed industrial capacities remain under-utilised. In many cases the reason advanced is that there is no market for the product as the installed capacity is more than the demand therefor and that higher capacity has been licensed keeping in view the demand projections for the future. In such cases and where there is export potential. Government should direct the parties to utilise the installed capacity to the optimum level and arrange for export of the quantity not required at home and earn foreign exchange until the domestic demand picks up, rather than restrict production at the demand level.
23	2.40	The Committee regret that in spite of considerable time being taken in scrutinising foreign

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		collaboration proposals and selection of technologies, processes, plants and machinery for petrochemical units, many plants have turned out to be defective and are experiencing operational problems, e.g. Hardillia Chemicals, Suhrid Geigy, NOCIL, Durgapur Chemical and F.C.I.'s Methanol Plant at Trombay. The Committee recommend that the Ministry of Petroleum and Chemicals should, in consultation with DGTD, analyse and identify the problems in respect of each such plant and take remedial action on an urgent basis so that the licensed capacities are fully utilised and there is no shortage.
24	2.41	Another reason given for the low production of some of the items is the delay in the commissioning of the down stream units. Thus, the production of Benzene by the I.O.C.'s Udex plant was low because of the delay in the commissioning of the G.S.F.C.'s Caprolactam Plant, which was to utilise the Benzene being produced at that plant. Similarly, the production in 1971 of Ethylene Glycol at the NOCIL Plant was only 38 per cent of the installed capacity as polyester consumer units did not come up in time. Such a situation, the Committee feel, could not have arisen had adequate care been taken to develop the petrochemical industries in an integrated manner. The Committee hope that Government would see that there is complete coordination and synchronisation in setting up the mother and down stream units so that the production capacities of the mother units do not have to remain idle unnecessarily.
25	2.42	The Committee find it very distressing that on account of heavy imports being allowed against import entitlements for export performance under the Import Trade Control, the market for certain indigenous products e.g. Phthalic Anhydride and Phenol was shrunk and consequently

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		certain producers had to limit their production. The Committee regret that due to failure on the part of the Government to foresee the consequences of this action, not only the industrial capacity existing in the country remained underutilised but foreign exchange was unnecessarily spent on imports to meet the domestic requirements. The Committee desire that the Ministry of Petroleum and Chemicals, being the Ministry responsible for production of petrochemicals should keep a strict watch on the operation of the Import Trade Control and ensure that the imports of petrochemicals are allowed only when the indigenous production is unable to cater to the demand in the country.
26	3.4	The Committee find that the default of the contractors M/s. Girdler Corporation of U.S.A. in regard to agreement for the setting up of the Fertilizer Corporation of India's Methanol Plant at Trombay and the delay in preferring the claim against the firm was already dealt with by the Committee on Public Undertakings (1968-69) in paras 2.49 to 2.60 of their Twenty Sixth Report (4th Lok Sabha) and they had made certain recommendations in that regard. The Committee would, however, take this opportunity to stress the importance of speedy conclusion of the proceedings before the International Chamber of Commerce before which the arbitration case has been pending for a long time.
27	3.5	Now that Government have permitted the plant to expand its capacity, the Committee stress that increased production as per expansion programme should be brought about in least possible time. Above all, care should be taken that production does not come to be vitiated by shortcomings which has depressed production of the original unit.

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28	3.8.	The Committee desire that the Ministry of Petroleum and Chemicals should closely watch the progress of setting up of Fertilizer Corporation of India's Methanol Plant at Haldia and see that the project is commissioned according to schedule by mid 1976 and that the shortcomings noticed in the case of the Fertilizer Corporation of India's Methanol Unit at Trombay do not recur.
29	3.12	The Committee are unhappy to observe that during 1971 the production of Phenol and Phthalic Anhydride at the Durgapur Chemical's Plant has been as low as 503 tonnes and 790 tonnes respectively against the installed capacity of 3300 tonnes for each of these products. The production during 1969 and 1970 was similarly poor. The unit was given a licence in 1961 for expansion of capacity to 6600 tonnes in respect of both the products which has not yet been implemented. Inspite of this consistently poor performance of the plant as also non-implementation of the expansion allowed as far back as 1961, the unit has been allowed an expansion of capacity for Phthalic Anhydride in 1972 from 6600 tonnes to 9900 tonnes. While the Committee understand the social compulsions under which the expansions of capacities had to be allowed to the Durgapur Chemicals, they would, at the same time, stress that it is the responsibility of the Government to see that the licensed capacities are fully put to productive use before further expansions are allowed to a Unit. Government should, while licensing additional capacity, also keep in view the interests of the processing units which use these products as raw material and also the need for the achievement of self reliance in the country at the earliest possible time.
30	3.13.	One of the reasons for low production of Phenol at the Durgapur Chemicals' Plant, it is stated, was the difficulty in the procurement of Benzene from the Durgapur Steel Plant. The

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		Committee need hardly stress that the problem of shortage of Benzene faced by the Durgapur Chemical's Plant for production of Phenol should be resolved at the earliest by arranging for supplies on assured basis and in adequate quantity either from the Durgapur Steel Plant or from other manufacturers. It is pertinent in this connection to mention that the Indian Oil Company's Udex Plant had to keep its production of Benzene low because of lack of markets.
31	3.20	The Committee are greatly concerned to note that the caprolactam project of the GSFC which was originally scheduled for commissioning in 1969 has been delayed by more than 4 years and is now scheduled for commencement of production in October, 1973. This has held up the fuller utilisation of the installed capacity for Benzene at the Indian Oil Corporation's Udex Plant. The Committee also find that the Ministry of Petroleum and Chemicals had failed to properly advise the party, after consultation with the Ministry of Finance, as to the source from which foreign credit was available for the project so that GSFC could negotiate with appropriate parties from the very beginning. This should have been done at the stage of considering the application for the issue of letter of intent which was some time before November, 1966. Instead, the party was advised of the appropriate source only in March, 1970 i.e. after nearly 3½ years. This indicates that there is something seriously lacking in the licensing procedure in cases involving foreign collaboration and for the allocation of credits therefor. The Committee recommend that the Licensing Committee and the Foreign Investment Board should seriously consider the matter and devise suitable procedures to see that after a project is cleared by the Foreign Investment Board, it is not denied the requisite foreign exchange.

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32	3.21	The Committee would in this connection like to point out that in the application for the issue of an industrial licence the party has to indicate the particulars of foreign collaboration intended, if any. The Committee would suggest that at the time of considering the issue of letter of intent to the party, the matter should be examined in consultation with the Department of Economic Affairs and at that stage, as far as possible, a clear indication should be given to the party whether the requisite foreign exchange would be available for entering into collaboration with that party, and if this is not possible, then two or more alternative sources may be indicated to the party so that the party can proceed with the negotiations from appropriate sources only and that time is not lost in exploring collaborators from sources from which credits would not be available.
33	3.22	The Committee further recommend that the Ministry of Petroleum and Chemicals should keep a close watch on the progress of the Caprolactam Project of GSFC and ensure that it is commissioned, as programmed, by October, 1973.
34	3.33	The Committee are distressed to find that the Gujarat Aromatics Project which was conceived as far back as 1963 to produce DMT—a Synthetic Fibre Intermediate and Orthoxylene—a primary source for manufacturing plasticisers, dyes, alkyd resins etc.—for feeding the down stream units could not be commissioned as yet, though it was due for commissioning in 1971. The Committee were during evidence assured that the D.M.T. plant would go into production by March this year but no firm date had been mentioned for the commissioning of the plant for the manufacture of Ortho/Mixed Xylenes.

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35	3.34	The Committee are surprised that the Ministry of Petroleum and Chemicals initially tried to blame the Ministry of Finance for the delay in commissioning of the Project by maintaining that the process of change over from one source of credit to another was spread over 16 months ending in December, 1969 and consequently the schedule automatically stood modified. The Committee are, however, convinced that the delay in the commissioning of the Gujarat Aromatics Project was not on account of foreign exchange difficulties as the Ministry of finance were, under an arrangement with KFW of West Germany, releasing foreign exchange for the project from time to time as per the requirements of the Ministry of Petroleum and Chemicals, during the process of change over from one credit source to another credit source in the same country.
36	3.35	The Committee strongly deprecate the leisurely manner in which the project is being implemented and hold the project authorities as well as the Government responsible for the delay. The Committee recommend that the Ministry of Petroleum and Chemicals should at least from now on see that the different plants of the project are commissioned at least by the target dates now fixed.
37	3.45	The Committee are greatly disappointed to observe that the progress made in the setting up of the Gujarat Olefins Project is much behind schedule. They are concerned to note that the commissioning of the Project had to be re-scheduled so as to synchronise with the setting up of the down-stream units which were decided at a later stage to be located in the public sector. The Committee feel that when Government took a decision about the setting up of the Gujarat Olefins Project, it should have simultaneously

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		gone into the question of setting up the downstream units in which the products manufactured at the Gujarat Olefins Project were to be processed. In this process of thinking in instalments and lack of integrated planning, the country has lost several years of valuable time in the development of petro-chemical industry which has vast potentialities for generating employment and making significant contribution towards industrial growth. The Committee would like to emphasise that Government should have an integrated plan for all such projects in the interest of their speedy implementation. It should also be made clear right from the very beginning whether a project or a part thereof is to be located in the public or private sector so that there is no scope for any mis-conception as a later date.
38	3.49	The Committee observe that the feasibility report for the Assam Petrochemical Complex was submitted in May, 1971; yet the assessment is that only Rs. 3.85 crores would be spent during the Fourth Plan period on this scheme out of an allocation of Rs. 10 crores therefor during that period. The Committee underline the need for concerted effort by the authorities concerned for implementing the Complex in the early part of the Fifth Plan so as to accelerate the industrialisation of this economically backward region which is, as the Prime Minister indicated in her statement in Lok Sabha on the 5th December, 1969, the dominant consideration in locating the Refining-cum-Petrochemical Complex there.
39	3.53	The Committee note that the Barauni Petrochemical Complex which was tentatively approved for implementation during the Fourth Plan period has not made much headway and the possibility of setting up the Complex is still under

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		examination by a Technical Group. The Committee feel that the Technical Group which is now examining the technical aspects of the proposed complex should have been appointed earlier and urge upon the Government to take an expeditious decision in the matter so that the scheme could be completed in the Fifth Plan period.
40	4.7	The Committee understand that M/s. National Organic Chemicals (NOCIL) were allowed to import petrochemical materials and to market them in India pending the commissioning of their petrochemical Project at Bombay. They recommend that on the same principle the import of petrochemicals and the distribution in the country of the imported materials, which are at present being handled by the State Trading Corporation, should be entrusted to the Indian Petro-Chemicals Ltd.—a Public Sector Undertaking—in order to enable them to gain market experience and build up a marketing organisation by the time their own products are ready for sale.
41	4.8	The Committee also note that the indigenous production of petrochemicals is not catching up with the demand resulting in shortages. Besides, its manufacture is confined to only a few units. Government should therefore, in consultation with the manufacturers, devise a system of distribution under which the processing industries, which are mostly in the small scale sector, get their requirements of raw materials direct from the manufacturers. Government should also see that such a distribution system is observed by the manufacturers in actual practice and that the materials are not allowed to be cornered by intermediaries.
42	4.13	The Committee feel that since petrochemical intermediates are raw materials for a large number of processing industries, their prices should

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		not be left to be determined by the forces of demand and supply alone. It is admitted that the profit margin in the petrochemical industry is fairly high. The restricted licensing policy observed by Government in the case of petrochemical industry leaves the existing manufacturers in a dominant position. This, coupled with the rising demand for these materials, is bound to keep the prices at an artificially high level at least till such time that newly licensed capacities are actually commissioned which may well take several years from now. Government should therefore take effective measures to ensure that the prices charged for petrochemical intermediates are reasonable and, as far as possible, internationally competitive and that no more than these agreed prices are charged by the manufacturers in actual practice. To facilitate fixation of a reasonable price, Government may have the cost of production analysed in suitable cases by the Bureau of Industrial Costs and Prices, on a priority basis.
43	4.14.	The Committee would also like to point out that import of certain petrochemicals e.g. Phathalic Anhydride and Phenol were allowed even though production capacity was available in the country compelling the indigenous producers to resort to distress sale of their products. The Committee would like Government to examine the matter in detail and inform them of concrete measures taken or proposed to be taken to obviate recurrence of such instances which had the effect of depressing growth of indigenous industry besides resulting in avoidable expenditure of foreign exchange.

APPENDIX VIII

(*Vide* Introduction)

Analysis of Recommendation Conclusions contained in the report.

CLASSIFICATION OF RECOMMENDATIONS

A. Recommendations effecting economy: Nil

B. Recommendations for improving organisation and working: Sr. Nos. 1—43.

C. Miscellaneous Recommendations: Nil.

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