GOVERNMENT OF INDIA
TARIFF COMMISSION

REPORT
ON
The Continuance of Protection to the Calcium Carbide Industry

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GOVERNMENT OF INDIA

MINISTRY OF COMMERCE

New Delhi, the 14th December, 1964.

RESOLUTION

Tariffs

No. 12(1)-Tar/64.—The Tariff Commission has submitted its Report on the continuance of protection to the Calcium Carbide Industry on the basis of an inquiry undertaken by it under Sections 11(e) and 13 of the Tariff Commission Act, 1951. Its recommendations are as follows:—

(1) Protection granted to the calcium carbide industry should be continued for two years more till 31st December, 1966, at the existing rate of duty, that is, 50 per cent *ad valorem*, exclusive of surcharge.

(2) The Government of Uttar Pradesh should be persuaded to relax its restrictive policy and make lime-stone deposits at Kota available to manufacturers of calcium carbide as well which, it appears, is possible without prejudice to the interest of its cement factory.

(3) It is the spirit behind the Electricity Rules of the Government of Maharashtra which is relevant to the issue of concessional duty on electricity and if the unilateral concession offered were motivated by a desire to assist deserving industries, the request of Calico Mills—Chemical Division can be met by the State Government by a suitable amendment widening the scope of the exemption in the Rules.

(4) Since calcium carbide is an important industrial raw material, its producers, in the discharge of their obligations to consumers, should at all times take particular care to ensure that their selling prices bear a reasonable relationship to costs and spare no efforts to bring down costs in which process as in case of raw materials and power Government should afford them all facilities.

(5) Industrial Chemicals Limited should not shift to "B" grade output by changing its raw materials since apart from the question of its past reputation the maintenance of its production of grade "A" with a gas yield comparing favourably with grade "B" of other producers would be necessary for this company to sustain its competitive position in distant markets.

2. Government have given careful consideration to these recommendations but having regard to the progress the industry has made so far and the fact that in the present circumstances there is no likelihood of any unhealthy competition from imports, Government consider that tariff protection to the Calcium Carbide industry need not be continued beyond 31-12-1964.

Government, however, propose to continue, for the time being, the rate of duty as at present. Necessary legislation to implement Government's decision will be undertaken in due course.

3. The attention of the Government of Uttar Pradesh is invited to recommendation (2) and of Government of Maharashtra to recommendation (3).

4. The attention of the producers of calcium carbide is invited to recommendation (4). Government have also taken note of last portion of the recommendation.

5. Attention of the Industrial Chemicals limited, Talaiyuthu, Madras is invited to recommendation (5).

ORDER

ORDERED that the Resolution be published in the *Gazette of India* and a copy thereof communicated to all concerned.

D. N. BANERJEE,
Joint Secretary to the Government of India.

CONTENTS

REPORT ON THE CONTINUANCE OF PROTECTION TO THE CALCIUM CARBIDE INDUSTRY

Previous inquiries

1. This is the fourth inquiry into the case of protection to the calcium carbide industry, the previous inquiries having been held in 1956, 1958 and 1961. In 1956 we recommended grant of protection to this industry for a period of two years and the levy of a protective duty of 45 per cent *ad valorem*. Government accepted the recommendation regarding the grant of protection but maintained the duty at 50 per cent *ad valorem*, which was the prevailing revenue duty. The second inquiry in 1958 covered, besides the question of continuance of protection to the industry, the examination of fair ex-works prices of calcium carbide produced by Birla Jute Manufacturing Co. Ltd., this being the only unit then engaged in commercial production of calcium carbide. Government accepted our recommendations for the extension of protection by three years, till 31st December 1961, without any change in the import duty, as also the fair ex-works selling prices recommended for different grades of calcium carbide manufactured by the company. After our third inquiry in 1961 Government agreed to continuance of protection to the industry for a period of three years, that is, upto the end of 1964, at the prevailing rate of duty of 50 per cent *ad valorem*, but fixed the fair ex-works selling prices of calcium carbide lower than those recommended by us. These prices which remained in force originally upto 31st December, 1962 were subsequently continued till the prices of calcium carbide were decontrolled by Government from 16th December 1963.

Present inquiry

2. Protection granted to this industry is due to expire on 31st December 1964. The present inquiry has been undertaken by us under Section 11(e) read with Section 13 of the Tariff Commission Act, 1951, which empowers us to inquire into and report on any further action required in relation to protection granted to an industry with a view to its increase, decrease, modification or abolition according to the circumstances of the case.

3. Method of inquiry

3.1. Questionnaires were issued to producers, consumers and importers of calcium carbide in January 1964. A press note was issued inviting interested parties to obtain copies of relevant questionnaires and communicate their views to the Commission. A detailed memorandum covering the different aspects of the industry was called for from the Indian Chemical Manufacturers' Association. The Director General of Technical Development (D.G.T.D.) was requested to furnish a memorandum on the progress of the industry since the last inquiry in 1961, the present position of the industry and other relevant points. A letter was addressed to the Development Commissioner, Small Scale Industries for similar information about production units in the small scale

sector, if any. The Ministries of Steel, Mines and Heavy Engineering, and Petroleum and Chemicals, the Coal Controller and the Railway Board were requested to indicate the progress made in implementing our recommendations in the last Report. The Director, Geological Survey of India, was addressed for information regarding the location of new areas of limestone, etc. The Durgapur Projects Ltd., the Assam Oil Co., and India Carbon Ltd., were addressed for information regarding supplies of hard coke and petroleum coke. The Tinplate Fabricators Association was asked to furnish data regarding the production and supply of drums for packing calcium carbide. The Indian Standards Institution, the Director General of Supplies and Disposals and the State Trading Corporation were requested to furnish information in respect of the latest standard specifications, Government purchases and imports of calcium carbide respectively. Data regarding latest c.i.f. prices were called for from the Collectors of Customs at the principal ports, and the Indian Embassies in the U. K., France and West Germany were addressed for f.o.b. quotations of calcium carbide in those countries. The Directors of Industries of the States of Maharashtra, Madras, West Bengal, Kerala and Rajasthan, where units in the industry are located, were requested to furnish memoranda on the problems of the units in their respective States. Other State Governments were also requested to communicate their views in case they were interested in the inquiry either as producers or as consumers. A list of persons to whom questionnaires/letters were issued and from whom replies or memoranda were received is given in Appendix I.

3.2. The Birla Jute Manufacturing Co. Ltd., Calcutta (Calcium Carbide Unit) and the Industrial Chemicals Ltd., Talaiyuthu (Madras) were selected for cost examination, these being the units whose costs were examined in connection with the last inquiry. A list of factories visited by us and officers of the Commission is given in Appendix II.

3.3. A public inquiry into this industry was held at our office on 31st March, 1964 followed by cost discussions with the representatives of the units concerned on the following day. A list of those who attended the inquiry is given in Appendix III.

4. Scope of the inquiry

4.1. For our previous Report in 1961, we had included within the scope of our inquiry the determination of fair selling prices of calcium carbide under Section 14(3)(c) of the Tariff Commission Act, along with a review of protection to the industry. The decision of Government regarding decontrol of the prices of calcium carbide from 16th December, 1963 appeared to exclude consideration of the question of fair selling prices from the scope of our present inquiry and we received a confirmation of this from them (*vide* Ministry of International Trade letter No. 20(7)-Tar/63, dated 19th March 1964). We have accordingly restricted the inquiry to the protection aspect of the case in terms of Section 11(e) read with Section 13 of the Tariff Commission Act, as stated in paragraph 2.

4.2. In the memorandum submitted to us by the Carbide of Calcium Merchants Association, Calcutta a request was made that calcium carbide of 14 ND size should be excluded from the scope of protection. The Association stated that only one or two units were producing this variety since the last inquiry and alleged that while these units had failed to come up to the International standard in size, dust percentage and gas yield they were charging a high rate for the product which was consumed by a large section of actual users. The suggestion did not receive any support from the representatives of various interests present at the public inquiry. Since 14 ND size represents only a particular commercial variety of calcium carbide in which some of the indigenous producers are interested and the production of like size grades has significance being an integral part of the production pattern and economy of the industry, we have not accepted the suggestion for leaving out the 14 ND size of calcium carbide from the scope of our inquiry.

5. Implementation of Commission's recommendations made in the last Report (1961)

5.1. The recommendations made in our last Report (1961) on matters other than tariff protection and the extent to which they have been implemented are briefly stated below:

5.2. *Recommendation No. (1):*

"Government should take steps to open up the areas (Kota and Malkangiri) where deposits of high grade limestone have been located and by connecting them by rail or road make them easily accessible to consuming industries like calcium carbide and soda ash. Intensive efforts should also be made to locate further deposits of good quality limestone near the existing calcium carbide units."

5.2.1. Shortly after our last inquiry we were informed by the Ministry of Railways (Railway Board) that the construction of railway lines to serve Kota and Malkangiri areas had not been included in their Third Five Year Plan. However, since these areas were accessible by road from rail-heads on existing or new lines under construction, the Railway Board suggested that the question of transporting limestone by road to the rail-head might be considered. We have since been informed by the Ministry of Industry that this matter was taken up with the Roads Wing of the Ministry of Transport and Communications and that the Dandakaranya Development Authority has been requested to take immediate steps to improve the road from Motu to Kota *via* Malkangiri covering a distance of 112 miles. At the public inquiry the representative of the Birla Jute which is nearest to the deposits, stated that in view of the transport difficulties and costs he would prefer obtaining his supplies from Churk in the Mirzapur District in U.P., if available.

5.2.2. As regards new deposits of good quality limestone near the existing calcium carbide units, the Director, Geological Survey of India has informed us that the results of the investigations carried out by his Department in several areas showed that most of the deposits do not

conform to the specifications for limestone required by the calcium carbide industry. The problem and prospects of supply of limestone for this industry are further discussed in paragraph 8.1.1.

5.3. *Recommendation No. 2:*

"The Government of India should take up on a priority basis with the Durgapur Coke Oven Plant the question of manufacture of low ash and low phosphorus coke in the Durgapur Coke Oven Plant to meet the requirements of all the industries like calcium carbide, for which such coke is essential. Further it would be in the interest of the calcium carbide industry to encourage producers of hard coke also to undertake manufacture of high grade coke required by it by offering them prices higher than those for ordinary coke."

According to information furnished to us by D.G.T.D. and some of the producers the Durgapur Coke Oven Plant has been meeting part of the requirements, though the supply is reported by the producers to have high ash and phosphorus content. The Durgapur Projects Ltd. has now informed us that the proposal for manufacture of low ash and low phosphorus coke has been dropped by it.

5.4. *Recommendation No. 3:*

"The Government of India should, in consultation with the Government of Assam and the Coal Controller, examine whether the staff of Assam Oil Co. Ltd., should not be required to use ordinary fuel locally available and release the valuable petroleum coke for essential industrial uses."

In this connection, the Coal Controller has reported that the question of supplying fuel to the staff of the Assam Oil Co., was considered, but no alternative arrangement could be made. The production of soft coke in Assam is not sufficient to meet the requirements and coke would have to be obtained from West Bengal and Bihar Coalfields, making the supply costlier than the petroleum coke which is made available by the Assam Oil Co., itself. The Coal Controller has further stated that it has no control over the production and distribution of potroleum coke. The Assam Oil Co., has informed that no supplies of petroleum coke were made to any carbide manufacturers since 1963 and that it is committed to supply all the available coke to India Carbon Ltd., Gauhati, for the production of calcined petroleum coke, a product in which the manufacturers of calcium carbide are not interested. The D.G.T.D. has however, informed us that when the Barauni Oil Refinery goes into production it will be in a position to meet the requirements of the carbide industry in respect of petroleum coke.

5.5. *Recommendation No. 4:*

"Government should also take steps to ensure that the calcium carbide industry does not remain dependent on imports for its requirements of petroleum coke."

According to information furnished by D.G.T.D. it should be possible to dispense with imports only when supplies are available from the Barauni Oil Refinery.

5.6. *Recommendation No. 5:*

"Pending an investigation by the Development Wing of the complaints by Calcium Carbide manufacturers that the quality of drum containers supplied by outside drum manufacturers does not conform to the prescribed minimum safety specifications, it is desirable to improve the bargaining strength of Birla Jute Manufacturing Co. Ltd., and Calico Mills, Chemical Division by issuing to them import licences for their actual requirements of steel sheets so that they can themselves import steel sheets of the correct specifications and exercise control over the fabricators who undertake to manufacture drums to the rigid specifications required."

Birla Jute has informed that since the licensing period October 1961—March 1962 it has been issued import licences for sheets required for making drums and that these imported sheets are distributed to different fabricators. As regards Calico Mills, the unit has stated that till recently licences were issued only in the name of the fabricators. We were informed by the representative of D.G.T.D. at the public inquiry that facilities for issue of import licence in favour of the carbide manufacturer would be available to Calico Mills also when the latter applies for it in the next licensing period. Both Birla Jute and Calico Mills, however, have urged that the position in respect of the supply of drums still remained unsatisfactory on quality and cost considerations and their problems in this respect could be effectively solved only when they were permitted to have drum making units of their own. The matter is further discussed in paragraph 8.3.1.

5.7. *Recommendation No. 6:*

"The Coal Controller should review the position of the availability of Giridih coke and arrange for its equitable distribution with due regard to the specifications of coke required by the several industries at present consuming Giridih Coke."

We were informed by the Coal Controller that the average monthly production of hard coke at the Giridih Coke Plant is 200 wagons and that this was being distributed to various consumers on the recommendation of the Chief Combustion Engineer, the share of the calcium carbide units being as follows:— (i) Industrial Chemicals Ltd., 7 wagons; (ii) Birla Jute, 8 wagons; (iii) Calico Mills, 15 wagons and (iv) Rajasthan Vinyl and Chemical Industries, 8 wagons—making a total of 38 wagons. The rest of the wagons were reported to be distributed to the ferro-manganese and ferro-alloys industries. The Coal Controller further stated that the prices of the Giridih coke being higher than those of other coke plants, the units in these industries would in future draw their requirements from other coke plants, and that, to that extent, hard coke could be made available to the calcium carbide industry. At the

public inquiry the representative of the Coal Controller stated that hereafter Giridih coke could be made available to the calcium carbide industry to the extent of 75 wagons per month, which according to the representative of D.G.T.D. should fairly meet the requirements of the carbide manufacturing units, having regard to their total consumption of carbonaceous materials.

6.1. *Present position of the industry.*

6. Present position of the industry, capacity, production and future expansion

6.1.1. At the time of our last inquiry in 1961, there were three units engaged in the manufacture of calcium carbide, namely, (i) Birla Jute Manufacturing Co. Ltd., Birlapur, West Bengal, (ii) Industrial Chemicals Ltd., Talaiyuthu, Madras and (iii) Calico Mills—Chemicals Division, Anik-Chembur, Bombay. A fourth unit, Travancore Electro-Chemical Industries Ltd., Chingavanam, Kottayam, which had remained closed since 1954 was expected to go into production in 1962. In addition, D.C.M. Chemical Works, Delhi was granted a licence for the establishment of a new unit at Kota, Rajasthan.

6.1.2. The number of manufacturing units has since increased to four including Rajasthan Vinyl and Chemical Industries at Kota established by D.C.M. Chemical Works, Delhi, which is reported to have commenced trial run towards the end of 1963 and regular production from the beginning of 1964. Travancore Electro-Chemical Industries which still remains closed expects to go into production by November 1964. The D.G.T.D. has informed us that another unit, Plastic Resins and Chemicals Ltd., Bombay, has recently been granted a licence for the manufacture of calcium carbide at Sahupuram in Madras State. Thus at present there are six units licensed to manufacture calcium carbide, of which four are in actual production. The position of each of the units is briefly indicated below:

6.1.2.1. *Birla Jute Manufacturing Co. Ltd., Birlapur, West Bengal.* This unit continues to form a small part of Birla Jute Manufacturing Co. Ltd., with its entire capital advanced by the Jute Division of the company. It has reported that there has been no change in its management since our last inquiry in 1961 and has not entered into collaboration with any foreign firm. Nor has there been any new addition to its calcium carbide section since the last inquiry, prior to which its production in an old furnace of 2,000 KVA (or 10 tonnes per day) had been augmented by the installation in 1959 of a new furnace of 4,800 KVA (27 tonnes per day). The net fixed assets employed solely for the manufacture of calcium carbide as on 31st March 1963 is reported by the unit at Rs. 35.40 lakhs, after providing for a depreciation of Rs. 5.17 lakhs. According to the estimates prepared by our Cost Accounts Officer the profit earnings of the carbide unit of the company during the year ended 31st March 1963 in relation to its employed capital, appreciably exceeded the return provided in our previous Report for assessment of fair ex-works prices. The average number of workers employed during 1961, 1962 and 1963 was 322, 311 and 313 respectively.

6.1.2.2. *Industrial Chemicals Ltd., Talaiyuthu.*—Since our last inuiry there has been no change in the management of this company. ts paid up capital, however, has increased from Rs. 34.75 lakhs to ₹s. 36.00 lakhs. This unit too has neither technical nor financial collaoration with any foreign firm. Subsequent to the last inquiry, it has nstalled a raw material handling equipment for the automatic feeding of charcoal and coke into the lime furnace. Further, it has erected a oattery of five lime kilns for calcining limestone. The net fixed assets it the close of its latest accounting year ending 30th June 1963 stood it Rs. 51.53 lakhs, after providing for a depreciation of Rs. 4.59 lakhs luring that year. The company which could not earn any profits upto June 1961, because of various teething troubles, started earning profits rom the following accounting year. After providing for interest charges ind depreciation and including development rebate it made a net profit of Rs. 6.39 lakhs in the year ending 30th June 1962 and Rs. 9.85 lakhs next year enabling it to declare a dividend of 6 per cent that year. The iverage number of workers employed during each of the years 1961. 1962 and 1963 was 359, including 72 labourers employed through con.ractors for breaking and handling raw materials.

6.1.2.3. *Calico Mills, Chemicals and Plastics Division, Bombay.*— This unit is a part of the Ahmedabad Manufacturing and Calico Printng Company Ltd., Ahmedabad. The Chemicals and Plastics Division situated at Anik-Chembur, Bombay comprises four separate factories manufacturing caustic soda, chlorine, hydrochloric acid, calcium carbide, polyvinyl chloride and processed goods. In its calcium carbide plant the company manufactures in addition to calcium carbide, hydrated lime also. The production of calcium carbide commenced in 1961. This company too has not entered into any technical or financial collaboration with any foreign firm. There has been no addition to plant and machinery since the last inquiry in 1961. The value of net assets used for the manufacture of calcium carbide by this unit (which is only a small part of its total capital investment) was Rs. 81.64 lakhs at the end of its accounting year 1962-63 after providing for a depreciation of Rs. 10.98 lakhs during that year. The calcium carbide produced by the unit is being used mainly for the manufacture of P.V.C. and other organic chemicals in separate sections of the organisation located in the same campus. Only the surplus output of calcium carbide is available for sale. The average number of workers employed by the unit has shown a steady rise from 180 in 1961 to 200 in 1962 and 205 in 1963.

6.1.2.4. *Travancore Electro-Chemical Industries Ltd., P.O. Chingavanam, Kerala.*—This unit, started in 1950 with an initial capital outlay of Rs. 11.5 lakhs had a licensed annual capacity of 1,000 tonnes. After producing small quantities of calcium carbide on an experimental basis in 1954, it remained shut-down during our last two inquiries in 1958 and 1961. As the inhibiting factor was the uneconomic size of the unit, it obtained an increase of its licensed capacity to 10,000 tonnes per annum and at the time of the last inquiry in 1961, had become a private limited company with a firm called Indian Industries (P) Ltd., as its managing agents. The unit has informed us that its issued capital has been raised to Rs. 35.20 lakhs out of which Rs. 30.46 lakhs are

subscribed and paid up. It has entered into technical collaboration with an East German firm, M/s. DIA Invest Export, Berlin W8, for supply of complete machinery, drawings and services of technicians till the plant is put into operation. Although the unit was expected to commence production by October 1962, it could not do so as some delay occurred due to financial and other difficulties in the construction of buildings and obtaining and erection of machinery. It has now informed us that it has been taking steps to go into production by November 1964.

6.1.2.5. *Rajasthan Vinyl and Chemical Industries Ltd., Kota.*— The Delhi Cloth and General Mills Co. Ltd., Delhi, are the sponsors of this unit. In our last Report (1961) it was stated that this unit with a capacity of 40 tonnes of calcium carbide per day was not likely to go into production before 1964. According to information furnished by D.G.T.D. this unit already commenced production of calcium carbide towards the end of 1963, the bulk of its output being meant for P.V.C. It has reported a production of 826 tonnes of calcium carbide for the month of January 1964, but has not furnished detailed replies to the questionnaire issued to the company.

6.1.2.6. *Plastic Resins and Chemicals Ltd., H.O. Bombay.*—A new licence has been granted to Plastic Resins & Chemicals Ltd., Bombay for the manufacture of calcium carbide. The factory with its capacity licensed at 30,000 tonnes a year, is due to be established at Sahupuram in Madras State and the scheme is linked up with a P.V.C. project. The company, which is managed by a Board of Directors, has been incorporated as a public limited concern with an authorised capital of Rs. 4 crores. It has entered into collaboration agreements for the technical know-how and supply of plant and machinery with Japanese collaborators and these agreements are awaiting the approval of the Government of India. According to information furnished by D.G.T.D. the unit is likely to commence production only during the Fourth Plan period.

6.2. *Capacity.*

6.2.1. In paragraph 5.3 of our last Report (1961) we had indicated discrepancies in the reported annual capacity of the three units engaged in the manufacture of calcium carbide. The capacity of Travancore Electro-Chemical Industries Ltd., was not taken into account as it had remained closed for over six years prior to the last inquiry. On the basis of the discussions at the public inquiry held then the annual installed capacity in each case was calculated on the basis of daily rated capacity multiplied by 330 days and rounded off. In view of the obvious discrepancies between the licensed and installed capacities of the units, we had suggested that necessary steps should be taken by Government to regularise the position by allowing suitable amendments of the licences issued to the respective parties.

6.2.2. Since our last inquiry, no new licence for expansion has been issued to any of the producing units. However, in the case of licensed and installed capacity, the units have again furnished figures which do

not tally with the figures reported by D.G.T.D. The licensed capacity and the present actual installed capacity of the units in production as reported by them are given below:—

(In tonnes)

Sl. No.	Name of the unit	Annual licensed capacity	Annual installed capacity
1	Birla Jute Manufacturing Co. Ltd. . . .	6,600	11,550
2	Industrial Chemicals Ltd.	10,000	10,000
3	Calico Mills-Chemical Division	7,200	10,000
4	Rajasthan Vinyl and Chemical Industries Ltd. .	13,200	14,400
	TOTAL .	37,000	45,950

NOTES:—

(i) *Birla Jute Manufacturing Co.*—The installed capacity of 11.550 tonnes is made up of 8.250 tonnes of the bigger furnace and 3.300 tonnes of the smaller furnace. The units has stated that as the country has an appreciable surplus in carbide it need use its smaller furnace only when the bigger furnace is under repair or overhaul.

(ii) *Calico Mills, Chemical Division.*—This figure is arrived at by the unit taking into consideration the carbonaceous material available at present containing high percentage of ash.

(iii) *Travancore Electro-Chemical Industries Ltd.*—This unit has not been included in the list since it is yet to resume production on the basis of its enhanced licensed capacity of 10,000 tonnes per annum.

6.2.3. The D.G.T.D. has furnished us with a separate set of figures in respect of licensed and installed capacity as follows:—

(In tonnes)

		Annual capacity	
		Licensed	Installed
1	Birla Jute Manufacturing Co. Ltd. . . .	12,300	12,300
2	Calico Mills—Chemicals and Plastics Division . .	13,200	13,200
3	Industrial Chemicals Ltd.	9,000	9,000
4	Rajasthan Vinyl and Chemical Industries Ltd. .	13,200	13,200
	TOTAL .	47,700	47,700

Inclusive of Travancore Electro-Chemicals the total licensed capacity would stand at 57,700 tonnes.

6.2.4. The above figures would indicate that Government have taken action on our suggestion for regularisation of the installed capacity, but the units which have reported older figures have apparently yet to be notified about it. The position was discussed at the public inquiry where the representative of D.G.T.D. stressed that the installed capacity was to be assessed on the basis of the plant set-up and production potential, unaffected by market demand for the end products or variability in the quality of raw materials used. He pointed out in this connection that installed capacity of a calcium carbide unit was determined by the formula: $\frac{\text{Furnace KVA}}{4{,}000\ \text{Kwh}} \times 9$ (home factor) $\times 24 =$ daily rated capacity. We are in agreement with this view, which in fact led us to accept the higher installed capacity figures at the last inquiry which were then accepted by the producers as well. The points now urged by Birla Jute and Calico Mills do not warrant a reduction of installed capacity as such whatever relevance they might have by way of indicating possible low utilisation of such capacity.

6.3. *Future expansion.*— None of the existing producing units has any plans for expansion of capacity in the near future. During the next three year period only Travancore Electro-Chemicals is expected to go into production, while, as already stated, the scheme of Plastic Resins and Chemicals Ltd., which has not yet placed order for plant and machinery is likely to mature in the Fourth Plan period.

6.4. *Production.*—The statement below shows the actual production of calcium carbide during 1961, 1962 and 1963 as furnished by individual units, corresponding figures received from D.G.T.D. being shown in brackets:

(In tonnes)

Name of the unit	1961	1962	1963
1. Birla Jute Mfg. Co.	8,506 (7,976)	11,359 (11,889)	11,101 (11,100)
2. Industrial Chemicals	7,004 (7,003)	8,421 (8,421)	9,009 (9,009)
3. Calico Mills—Chemical Division . .	4,479 (4,480)	6,113 (6,113)	6,797 (6,797)
TOTAL .	19,989	25,893	26,907

Details showing the production of calcium carbide size-wise in the above units are given in Appendix IV. There has been a steady increase in the annual production upto 1962 and output in 1963 representing utilisation of the installed capacity to the extent of about 80 per cent, exclusive of Rajasthan Vinyl which commenced commercial production in 1964.

6.5. *Future production.*—The estimates of production for the next three years furnished by the present and prospective producers in connection with this inquiry are given below:

(In tonnes)

Name of the manufacturer	1964	1965	1966
Birla Jute Mfg. Co. Ltd.	8,250 (8,500)	8,250	8,250
Industrial Chemicals Ltd.	8,500 (8,500)	8,500	8,500
Calico Mills-Chemical Division . . .	10,000 (12,500)	10,000	10,000
Travancore Electro-Chemical Industries .	2,000 (9,500)	10,000	10,000
TOTAL . . .	28,750 (39,000)	36,750	36,750

NOTE—Figures in brackets indicate the estimates for 1964 accepted by the Commission in the last Report, after discussion at the public inquiry.

Unlike other, units, Birla Jute's estimate indicates a decline by about 3,000 tonnes from 1964 onwards against its actuals in 1962 and 1963 on account of its apprehension that the improvement in the supply condition of calcium carbide with coming in of new units and keener competition in the Eastern region markets would compel it to suspend regular working of its smaller furnace. No estimates have been furnished by Rajasthan Vinyl Industries, but according to its actual production in January 1964 and on the basis of installed capacity its output for the purpose of the estimate may be taken as 10,000 tonnes during each of the years 1964 to 1966. As regards Travancore Electro-Chemicals, the representative of the company stated at the public inquiry that as a result of certain changes in its management the reasons for the delay in its progress on account of difficulties, financial and otherwise, were removed. The construction and installation programme of the company whose complete machinery had already arrived could now be expected to follow the planned schedule, which envisaged commencement of production by November 1964. Our impressions after a visit, however, are that, even with these improvements, the estimates of production furnished by the company for 1964 and 1965 are over-optimistic as even the completion of building constructions was bound to take some time and a new plant takes time to erect and run in. In the light of the discussions at the public inquiry we have therefore modified the company's estimates as nil production in 1964, and 40 per cent and 60 per cent of the capacity during 1965 and 1966 respectively. With the adjustments stated above the estimated total production figures for the industry will stand at 36,750 tonnes in 1964, 40,750 tonnes in 1965 and 42,750 tonnes in 1966. However, the reasons indicated by Calico Mills

and Birla Jute for a heavy decline in their estimated production appear to be excessively pessimistic. As discussed hereafter (*vide* paragraph 8.1) the raw material position is expected to improve significantly in the near future. Internal competition in the industry may not attain serious proportion as apprehended; for, while the main concern of Rajasthan Vinyl would be to step up its production of P.V.C. to the optimum, and Travancore Electro-Chemicals is not likely to attain full-scale production during the next two years, the indigenous production of calcium carbide would receive all the time an impetus from the sizeable increase in demand, as indicated in the next paragraph.

7. Demand

7.1. In 1961, taking note of the increasing usage of calcium carbide in the manufacture of P.V.C. resins and organic chemicals we estimated the annual domestic demand for calcium carbide at 20,000 tonnes and expected it to rise to 30,000 tonnes, 40,000 tonnes and 55,000 tonnes during the years 1962, 1963 and 1964 respectively. As against these estimates, the apparent consumption of calcium carbide based on sales of domestic product and imports was 20,227 tonnes in 1961, 25,103 tonnes in 1962 and 28,198 tonnes in 1963. The Third Five Year Plan envisages the production of calcium carbide at 60,000 tonnes by 1965-66. In connection with the present inquiry, we have received estimates of demand, current (1964) and for the next two years from the D.G.T.D., three main producers and the Carbide of Calcium Merchants' Association. These are set forth in the statement at page 12 showing the details of demand according to consuming industries on which the estimates are based.

7.2. The above estimates were discussed at the public inquiry in the light of the divergence between D.G.T.D.'s figures, particularly in regard to the demand of dissolved acetylene manufacturers catering by and large, to the needs of engineering industries and the much higher estimates of the producers. After taking all relevant factors into consideration, including the latest year's apparent consumption, the existence of unsatisfied demand, rising demand of engineering industries as a result of their steady expansion, which off-set inhibiting factors such as the increasing popularity of electric welding and growing use of substitutes like liquid petroleum gas (LPG), the consensus was in favour of accepting D.G.T.D.'s estimates with certain modifications. Thus there would be a net increase in the demand of dissolved acetylene manufacturers from 16,000 tonnes to 18,000 tonnes in 1964, from 18,000 tonnes to 21,000 tonnes in 1965 and from 20,000 tonnes to 25,000 tonnes in 1966, accompanied by a reduction in the demand for manufacture of organic chemicals from 16,000 tonnes to 11,600 tonnes in 1964, from 20,000 tonnes to 16,000 tonnes in 1965 and from 25,000 tonnes to 22,000 tonnes in 1966 owing to possible uses of petro-chemical substitutes like ethylene and other competitive factors. These modifications, in effect, placed the estimates of total demand at 37,500 tonnes in 1964, 46,000 tonnes in 1965 and 57,000 tonnes in 1966. In comparison the total licensed and installed capacity of the industry as stated in paragraph 6.2.3. is expected to reach the figure of 57,000 tonnes in 1965 with the commissioning of Travancore Electro-Chemical's plant

Statement showing estimates of demand for calcium carbide during 1964, 1965 and 1966, as furnished to the Commission

(In tonnes)

Sl. No.	Name of the Consuming industry	Directorate General of Technical Development			Industrial Chemicals Ltd.			Calico Mills Chemical Division			Travancore Electro-Chemical industries			Carbide of Calcium Merchants Association		
		1964	1965	1966	1964	1965	1966	1964	1965	1966	1964	1965	1966	1964	1965	1966
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Dissolved acetylene manufactured by organised factories	18,000	18,000	20,000	20,000	20,000	20,000	23,000	24,000	26,000	25,000	30,000	35,000	22,000	25,000	28,000
2	Acetylene gas generated by workshops	8,000	9,000	10,000	..	..	..	10,000	10,000	11,000	10,000	12,000	15,000	11,000	12,000	13,000
3	Acetylene gas for lighting purposes	..	..	..	10,000	10,000	10,000	3,000	3,000	3,000	5,000	6,000	10,000	2,000	3,000	3,000
4	Manufacture of organic chemicals	16,000	20,000	25,000	25,000	25,000	25,000	20,000	20,000	30,000	10,000	12,000	15,000	14,000	16,000	18,000
	TOTAL	40,000	47,000	55,000	55,000	55,000	55,000	63,000	67,000	80,000	50,000	60,000	75,000	50,000	56,000	62,000

in that year. As the capacity envisaged is considered adequate for meeting the growth in demand, we were informed by D.G.T.D. that Government for the present have imposed a ban on licensing of fresh capacity for the manufacture of calcium carbide.

8.1. *Raw materials.*

8. General position of raw materials, containers and power

8.1.1. *Limestone.*—As stated in paragraph 5.2. the position regarding both availability and quality of the material remains unchanged since the last inquiry. No information has been received from the Geological Survey of India about any new exploitable source of limestone conforming to the specifications for limestones for use in manufacture of calcium carbide, which requires a lime content of more than 54% (97/98% of calcium carbonate). Regarding prospects of the availability of the known deposits at Kota in the Mirzapur District (U.P.) about which a legal dispute was pending at the time of the last inquiry, Birla Jute has now stated that although the case has since been settled in favour of the U.P. Government, the State was not willing to grant prospecting licence to the company, as it intended to reserve the limestone deposits for its own cement factory at Churk. The company has urged that the high grade deposits could meet the better requirements of chemical industries like calcium carbide than ordinary portland cement. At the public inquiry we were informed by the representative of Geological Survey of India that the deposits at Kota are large enough to provide a surplus for meeting the limited requirements of calcium carbide manufacture of Birla Jute over what might be needed for the cement factory of the U.P. Government. In view of this situation and also because of considerations of wider national interest, it is desirable to ensure the best utilisation of the superior quality of the raw material in short supply. We consider the U. P. Government should be persuaded to relax its restrictive policy and make the material available to manufacturers of calcium carbide as well which, it appears, is possible without prejudice to the interest of its cement factory.

8.1.1.2. The three manufacturers, Birla Jute, Industrial Chemicals and Calico Mills are obtaining their limestone from Maihar, Rameswaram and Shojat Road, respectively. Birla Jute has opened an office with a laboratory at Maihar to get good and uniform quality of limestone as far as possible, pending availability of better sources of limestone. The quality is reported to be about 92/93 per cent of calcium carbonate. The company has also stated that it has surveyed the limestone areas in Banjari and Bhavanthpur in Bihar but the deposits have not been found encouraging. Industrial Chemicals is not at present using the quarried limestone at Talaiyuthu which did not yield high quality carbide. It has not mentioned any difficulties and problems at present about its sources of coral limestone at Rameswaram and Mandapan. Although the percentage of calcium carbonate in the coral limestone obtained from these places is about 90 per cent, it has a special advantage of having very low (0.2%) phosphorus content. Calico Mills has stated that limestone obtained from Shojat Road, its main source of supply, is not uniform and its physical characteristics are also not

suitable for the manufacture of calcium carbide, because the incidence of fines in handling becomes quite high. This limestone is reported to have calcium carbonate percentage not exceeding 95.5. According to information furnished by the D.G.T.D., Rajasthan, Vinyl and Chemical Industries Ltd., obtains its supply from Gotan in Rajasthan. Both Birla Jute and Calico Mills have occasionally used Gotan limestone but while the former has found it too costly on account of the transport cost involved, the experience of the latter has not proved it to be appreciably superior to its usual supplies from Shojat Road. Travancore Electro-Chemical Industries Ltd., will, it is understood, use shells available in the back waters near its location for the manufacture of the lime for calcium carbide.

8.1.2. *Hard Coke.*—Regarding hard coke also the position has changed little since the last inquiry. As stated in paragraph 5.7. adequate supplies from Giridih in future would appear to be assured, but the producers have complained about the high price of this coke, which is said to have low phosphorus content. Birla Jute has stated that the price of Giridih coke has gone up from Rs. 50.95 to Rs. 80.00 per tonne, while some quantity of Durgapur coke it is receiving is used only for lime kilns. Industrial Chemicals has been using Bararee coke and it pays service charges to Bararee Coke Co. at Rs. 28.80 per tonne, over and above the basic price of Rs. 46.20 per tonne in order to have reduced ash and phosphorus content in the coke; but due to procurement difficulties it has increased its consumption of other carbonaceous materials.

8.1.3. *Charcoal.*—Birla Jute and Industrial Chemicals have reported that the position about charcoal is generally satisfactory, except that the phosphorus content is high. The difficulties encountered in the transport of charcoal which was brought out during the last inquiry, have now eased. Calico Mills has, however, pointed out a number of difficulties regarding its supply and quality. It has to obtain charcoal from small traders and there is a wide fluctuation in quality, and moisture content which affects furnace operation. Apprehending difficulties in the years to come, it suggests that for making available adequate supplies of charcoal planned reforestation with quick growing plants like eucalyptus should be undertaken. We consider that the problem will be substantially mitigated in the near future with better availability of hard coke and petroleum coke from indigenous sources.

8.1.4. *Petroleum coke.*—The manufacturers of calcium carbide are not getting any petroleum coke from indigenous sources and have to import it from U.S.A., Rumania and Burma. The quality of imported petroleum coke is reported to be generally satisfactory, though there is a high percentage of dust, necessitating briquetting before utilisation, which entails additional cost on an expensive item. As overseas exporters are not interested in selling less than 5,000 tonnes in bulk at a time, it involves additional working funds for the manufacturer. The producers, it appears, have to live with this deficiency in respect of the imported material till indigenous supplies are available from the Barauni Oil Refinery.

8.1.5. *Anthracite coal.*—Anthracite coal has been imported from Vietnam by Industrial Chemicals and Calico Mills as an ingredient of their carbonaceous composition. The D.G.T.D. has informed us that hereafter no further import would be possible from that country on account of the political situation.

8.1.6. *Electrode paste.*—Electrode pasts is an indigenously available item. Birla Jute and Calico Mills are getting their supplies from the Hirakud factory of Indian Aluminium Co. Ltd., while Industrial Chemicals receives it from the Alwaye factory of the company. The quality is reported by Industrial Chemicals to be satisfactory, while Calico Mills has criticised it on the ground that activity of electrodes made from this paste is high and as a result consumption of electrode paste per tonne of calcium carbide goes up.

8.1.7. *Electrode casing.*—Industrial Chemicals has reported that it is unable to obtain 18G steel sheets to make electrode cases and is also not getting steel sheets of suitable size, namely, 1 meter × 2 meters which is most economical for casing as any other size used for the purpose entails waste. Birla Jute and Calico Mills have not made any comments about their requirements of steel sheets for electrode casing.

8.2. *Prices of raw materials.*—The producers have stated that the prices have gone up for all raw materials both indigenous and imported, required for the manufacture of calcium carbide. The latest prices have been duly taken into account in our estimates of costs.

8.3. *Containers.*

8.3.1. Of the four producers, only Industrial Chemicals Ltd., has a drum making plant of its own where it is using imported B. P. sheets of 24 G. The latest position of Birla Jute and Calico Mills obtaining their supplies from outside fabricators has been indicated in paragraph 5.6. Both these units have expressed dissatisfaction about the supply of containers by outside parties, and pressed the urgent need for having a captive drum making unit for self-consumption on consideration of quality, regularity of supply and costs. Production of Calico Mills is said to have suffered to some extent on account of irregular supplies of containers and it has reported that as import licences for steel sheets are issued in favour of fabricators of drums, it has not been able to secure the bargaining power envisaged in our previous recommendation in favour of issuing the import licence to carbide manufacturers. While both Birla Jute and Calico Mills have urged specific points to support their claims, contrary views have been expressed by drum fabricators against carbide manufacturers having drum making units of their own, on the ground that they are fully competent to meet the requirements of the latter. The Tinplate Fabricators Association has claimed that some of its constituents, mostly in and around Calcutta, have obtained I.S.I. certification marks and could supply drums for packing calcium carbide. We have been informed by D.G.T.D. that Government had not conceded the applications of Birla Jute and Rajasthan Vinyl and Chemical Industries for manufacture of containers for their own use, in view of the tight raw material position and existence of surplus capacity with commercial fabricators.

8.3.2. The issues raised by carbide manufacturers and drum fabricators were discussed at the public inquiry. We were informed by the representative of D.G.T.D. that Travancore Electro-Chemical Industries had its own drum making plant, while Rajasthan Vinyl had been obtaining its supplies of drums from an associate unit within the D.C.M. organisation. The representative of Birla Jute stated that while the issue of import licence in its favour had served the purpose of enhancing its bargaining power against fabricators its claim for a captive drum unit was based on more fundamental considerations, particularly for meeting the technological need of ensuring leak and moisture proof containers and also for achieving necessary economy in cost. He urged in this connection that in obtaining the supplies from fabricators at a distance of fortyfive miles there was considerable risk involved in containers developing leaks due to jostling of the empty drums in the trucks carrying them over the long distance, while during the monsoon period in West Bengal keeping them thoroughly moisture proof was a difficult problem. It was pointed out that both these factors involved not only deterioration of the packed material entailing claims of rebate from customers but also serious explosion hazards as calcium carbide should be packed in completely moisture proof hermetically sealed drums. As to the economy in costs the representative of the Company stated that in the central workshop of its group of factories in the present location the machinery equipment required was already available almost in full and no fresh installation involving any foreign exchange would be called for. These points by and large were endorsed by Calico Mills and the latter further stressed that more than anything else the urgency for a captive drum unit arose from the paramount need of having a regular supply of containers to ensure smooth and continuous production of calcium carbide. We had no satisfactory answer from the representative of drum suppliers to the allegation of irregular supplies. The representative of D.G.T.D. stated that his Directorate was not opposed to the representation of calcium carbide manufacturers but the decision rested with the Licensing Committee. The evidence tendered before us by representatives of the fabricators at the public inquiry indicated that of their total output of drums only a small percentage was consumed by the calcium carbide manufacturers. However, since this is a policy matter liable to be re-considered and as we have no knowledge of the various considerations which weighed with the Licensing Committee, we refrain from making any comments in this respect.

8.4. *Power (Electricity).*—Calcium carbide is an electricity intensive industry consuming about 4,000 units per tonne of carbide. Even a difference of one naya paisa per unit of electricity would affect the cost of calcium carbide by Rs. 40 per tonne. Of the three manufacturers of calcium carbide, Industrial Chemicals suffers from power-cut during the summer months which affects its production. It pays approximately 3 nP. per unit. A rate of 3 nP. per unit is reported to be available also to Rajasthan Vinyl and Travancore Electro-Chemical Industries. Birla Jute and Calico Mills have not indicated any shortage of power but both of them have complained about high charges which they have to

pay for electricity. In the case of Birla Jute, a part of the supply is obtained from its own generators in the jute mills, the bulk being obtained from the West Bengal State Electricity Board at the rate of 6.66 nP. per unit plus an electricity duty of 0.33 nP. per unit. The average cost of power, as given by the company, is 6.43 nP. per unit. The producer has complained that the rate is extremely high for an industry where the cost of electricity accounts for a significant proportion of the cost of production of the finished product. It has brought to our notice that the Company has made a representation to West Bengal Government for the grant of a special concessional rate of 4 nP. per unit to meet the special conditions of the industry, on the analogy of concessions allowed to an aluminium manufacturing unit in West Bengal, in which also the rate of electricity is of vital significance. As we have no information about the cost of electricity to West Bengal Electricity Board, nor of the policy followed by West Bengal Government in according concessions to specific categories of industries, we are unable to make any comments on the request and consider the representation of the Company to be a matter for decision by the State Government according to its policy. Calico Mills which obtains power from Tata Hydro-Electric Supply Company paid at an average rate of about 4.35 nP. per unit which included an element of duty levied by the Maharashtra State Government on electric power consumed by all factories in general. It has stated that till recently it was enjoying concessional duty on electricity according to which it was required to pay only 1/3 nP. as electricity duty (per unit). In October 1962 the State Government introduced some further concession to large users of electricity and the latest Electricity Rules allowed complete exemption from electricity duty to electro-metallurgical and electro-chemical industries, if in the opinion of the State Government the cost of electric energy consumed by an undertaking falling under these categories constituted 25 per cent or more of the cost of production of the finished product. The Company has reported to us that the Directorate of Industries, Maharashtra Government, has recently informed it that calcium carbide industry cannot be technically classified as an electro-metallurgical industry, although it may satisfy the criteria regarding the cost of power representating more than 25 per cent of the total cost of production. Under the latest Electricity Rules the Company has now ceased to enjoy even the previous duty concession. Pointing out that the impact of this duty per tonne of carbide comes to Rs. 26.6 extra per tonne of carbide the Company has requested us to recommend its case for complete exemption from the electricity duty. The matter was discussed at the public inquiry. The representative of D.G.T.D. averred that calcium carbide could not be categorised as either electro-chemical or electro-metallurgical and that the appropriate description of it would be electro-thermal according to the process involved. The point raised being a technical one we do not feel called upon to comment on its precise implications. We, however, consider that it is the spirit behind the Electricity Regulation which is relevant to the issue and if the unilateral concessions offered were motivated by a decision to assist deserving industries, the request of the Company can be met by the State Government by a suitable amendment widening the scope of the exemption in the Rules.

9.1. *Standards.*

9. Standards and quality

9.1.1. The Indian Standards Specification for calcium carbide technical IS: 1040-1957 has since been revised and published as IS: 1040-1960 (revised). At the time of first publication of the standard it was expected that the manufacturers would be able to improve the quality of carbide, so that quality 'B' could be removed from the standard by 1960 at the latest. But since quality 'B' continues to be largely produced, the specification for it has been retained in the revised standard. The gas yield has been expressed in the metric system as litres of acetylene per kg. of calcium carbide at 27°C and 760 mm. pressure. In the standard, the purity requirements of acetylene gas evolved and also the sieve analysis of graded sizes have been laid down for both 'A' and 'B' grades. In the earlier standard the graded sizes 4/15, 4/80 and 25/80 were not covered but these have been included now. The relevant extract of the standard is given in Appendix V. None of the producers has so far adopted the I.S.I. certification mark. It is, however, understood that an application for this from Industrial Chemicals is under consideration of the I.S.I.

9.1.2. At present only Industrial Chemicals using coral limestone of low phosphorus content has been producing 'A' grade calcium carbide, the other units being reported to produce the 'B' grade. Calico Mills, however, has sometimes produced small quantities of 'A' grade carbide. Thus at present there is only a limited production of 'A' grade calcium carbide for the industry as a whole. Calico Mills has informed us that larger production of 'A' grade by it is technically feasible, but a regular commercial production of this grade is not economically worthwhile since its manufacture from the type of raw materials available would involve extra expenses on electricity and carbonaceous materials to the extent of about Rs. 85 per tonne, which the market would not bear. Industrial Chemicals which did not appear to suffer from comparable handicaps should not in our view shift to 'B' grade output by changing its raw materials since apart from the question of its past reputation the maintenance of its production of grade 'A' with a gas yield comparing favourably with grade 'B' of other producers would be necessary for this company to sustain its competitive position in distant markets in Northern and Eastern India. It has been brought to our notice that there has been no price differential between grades 'A' and 'B' and the position in this respect has not undergone any change even after decontrol of the prices of calcium carbide.

9.2. *Quality.*

9.2.1. As regards quality, D.G.T.D. has informed us that the indigenous carbide is inferior to the imported variety and that efforts are being made to let it conform to 'A' or 'B' grade of I.S.I. specifications. The manufacturers claim to have taken steps to maintain and improve the quality of their products since the last inquiry. Birla Jute has stated that wherever supplies are made to Government Departments the material is tested by the Directorate of Inspection and has invariably been found satisfactory. It received some complaints from consumers

but they mostly related to deterioration of carbide due to leakage in drums. As regards further improvement of the quality, it has informed us that after consulting foreign experts it finds that with the existing raw materials it is not possible to produce grade 'A' carbide at present. Industrial Chemicals has stated that its product conforms to 'A' grade of I.S.I. specification and it has not received any complaint from customers regarding quality. Calico Mills has informed us that its product fully conforms to grade 'B' of I.S.I. specification and the product yields acetylene 15 to 20 litres more than the minimum specified. As regards complaints from the consumers, it has mentioned that Indian Oxygen Ltd., has complained about higher phosphene content which is due to the high phosphorus content of charcoal used, over which the firm has no control. Nevertheless, it is claimed that a vigilant control is kept on its charcoal supplies. We have not received any report from Rajasthan Vinyl regarding the quality of its products.

9.2.1.1. As regards the views of consumers, including D.G.S. & D. there is general satisfaction among them about the quality of indigenous calcium carbide, but it is pointed out by some of them that there is still scope for the manufacturers to effect further improvement in the quality of their products. At the public inquiry the representative of Indian Oxygen Ltd., referred to certain deficiencies in the indigenous products in respect of their higher phosphene content than laid down by I.S.I. The producers' representatives appeared to be seized of the problem and it is hoped that with better availability of hard coke and petroleum coke in future it will be possible for them, in case their quality consciousness is sustained, to minimise if not eliminate altogether the shortcomings in this respect. Our attention was also drawn to certain complaints of importers about the inferior quality of what is described as 14 ND size of indigenous calcium carbide compared to its imported counterpart. We have not, however, received such complaints from any of the actual users of this grade size who have replied to our questionnaire. The production and consumption of 14 ND size is relatively limited, the demand being estimated by one of the producers at about 1,500 tonnes per annum, which is capable of substitution by other small grain sizes now produced. So far as quality is concerned, this particular grade does not, in our opinion, constitute an isolated issue distinguishable from the general problems of the quality of indigenous calcium carbide.

10. Import control policy and imports.

10.1. *Import control policy.*—For purposes of import control calcium carbide is classified under Serial No. 31(a) of Part V of the Import Control Schedule. The detailed policy in this respect is set out in List II of Appendix 28 of the Schedule. Since the licensing period October 1961—March 1962, imports of calcium carbide have been banned.

10.2. *Imports.*—A statement regarding imports of calcium carbide, as recorded in the Monthly Statistics of the Foreign Trade of India, for the years 1961, 1962 and 1963 is given in Appendix VI. As a result of the restrictive import policy, the total imports have dwindled from

1,647 tonnes valued at Rs. 9 lakhs in 1961 to 57 tonnes valued at Rs. 0.29 lakh in 1963. During 1963 almost the entire quantity was imported from the United Kingdom.

Existing rate of duty

11. Calcium carbide is assessed to duty under Item No. 28(33) of the First Schedule to the Indian Tariff Act, 1934. The relevant extract is reproduced below:—

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of protective rates of duty
				The United Kingdom	A British Colony	Burma	
1	2	3	4	5	6	7	8
28(33)	Calcium carbide	Protective	50 per cent *ad valorem*	..	..	..	December 31st, 1964

NOTE: A general surcharge of 10 per cent was levied on all imports duties under the Finance Act, 1963. Under the present Finance Bill (1964) also, there is a provision to continue the surcharge at the same rate.

C. i. f. prices and landed costs

12. We have not been able to obtain the latest c.i.f. prices of calcium carbide from the Collectors of Customs at the principal ports or any of the importers, as the import of calcium carbide has been banned since October 1961—March 1962 licensing period. Nor have we been furnished with f.o.b. quotations of the material by any of our Embassies abroad who had been addressed in the matter. We received a quotation of the domestic price of calcium carbide from our Embassy in Paris but this could not be taken as a representative basis for the purpose of comparison with the costs of indigenous manufacturers. We were, however, furnished by Indian Oxygen Ltd., a leading consumer of calcium carbide having important overseas associates in U.K., with current f.o.b. price of calcium carbide of Norwegian origin, 4/80 mm. grade size at £ 30 (Rs. 400) per metric ton in respect of which the freight and insurance charges were advised as working out to £ 12-3 sh. (Rs. 162); the total c.i.f. price thus amounting to Rs. 562 per tonne. At the public inquiry the representative of Indian Oxygen Ltd., stated that the material was quite comparable with French calcium carbide which constituted the basic of our comparison at the last inquiry. We were also advised by the Company that there has been no change in the Norwegian price since 1959, which appeared to provide an indication of the stability of carbide prices in the international market since our last inquiry. Accordingly, and as generally agreed at the public inquiry, we have accepted the above c.i.f. price of Rs. 562 per tonne,

or a landed cost of Rs. 577 (with Rs. 15 added thereto for clearing charges), for determining the quantum of protection required by the indigenous industry, the wide range of 4/80 mm. grade covering practically the entire output of indigenous producers.

13. Cost of production and fair ex-works price

13.1. Our Cost Accounts Officers have examined the cost of production of calcium carbide of Birla Jute for the year ended 31st March 1963 and for the six-month period ended 30th September 1963, and that of Industrial Chemicals Ltd., for the year ended 30th June 1963. On the basis of the data furnished in the cost reports, after a discussion with the representatives of the companies, we have framed estimates of future cost and the fair ex-works price for the two units for the next three years. As details of costs are treated as confidential, the reports of the Cost Accounts Officers are being forwarded separately along with this Report as confidential enclosures. We, however, give below under broad heads our estimated fair ex-works price per tonne of calcium carbide manufactured by the two units:—

	Rs./Tonne estimates of future	
	Birla Jute Mfg. Co. Ltd.	Industrials Chemicals Ltd.
(i) Materials	343·00	287·09
(ii) Electricity	271·29	141·32
(iii) Other conversion charges	109·76	152·74
(iv) Depreciation	29·75	44·70
(v) Packing	85·00	91·64
TOTAL	838·80	717·49
(vi) *Less* credit for recoveries	21·10	5·93
Net cost of production	817·70	711·56
(vii) *Add* adjustment for fines	23·81	11·17
(viii) Cost of saleable carbide	841·51	722·73
(ix) *Add* margin for contingencies	20·00	20·00
(x) Return	73·22	87·56
Fair ex-works price	934·73	830·29

13.2. The factors that have been taken into consideration in estimating the above ex-works prices are briefly set out below:

13.2.1. *Production.*—The representative of D.G.T.D. informed us that established units could be expected to work not below 85 per cent of their rated capacity. We have, however, assumed an average annual

production of 11,300 tonnes in respect of Birla Jute and 8,500 tonnes in respect of Industrial Chemicals as against their annual installed capacity of 12,300 tonnes and 9,000 tonnes respectively. For this assessment we have taken into consideration their previous performance as well as the need for periodical relining of furnace and connected repairs likely to fall due in both the cases during the period under consideration.

13.2.2. *Raw Materials.*—Due to the non-standard character of limestone and coke and other carbonaceous materials used no norms of consumption could be determined for unit of production. The consumption of raw materials has been based on the actuals after taking into consideration any possible economies in their usage and at their latest available prices.

13.2.3. *Electricity.*—For the reasons mentioned above as the quality of the raw materials also determines power consumption, theoretical consumption requirements have to be eschewed in favour of reasonable actual performance. The carbide unit of Birla Jute Manufacturing Co. draws its supply of electricity from two sources, partly from the company's own generation and partly from the West Bengal State Electricity Board, while Industrial Chemicals obtains its entire requirements from the Madras State Electricity Board. For estimating the rate of electricity for future in the case of Birla Jute the weighted average of the costs of power obtained from both the sources has been taken into consideration. As regards Industrial Chemicals the basis of charge is on the maximum demand and its current rate of purchase has been adopted.

13.2.4. *Other conversion charges.*—These include consumable stores, stores for repairs and maintenance, wages and salaries and other overheads. Suitable adjustments have been made both in price and consumption factors in respect of stores materials and increases have been allowed in respect of salaries and wages for normal annual increments, wherever found necessary.

13.2.5. *Depreciation.*—This has been calculated at normal income tax rates for first and second shift working.

13.2.6. *Margin for contingencies.*—An allowance of Rs. 20 per tonne has been provided by way of margin for contingencies to cover, *inter alia*, likely shifts in the sources of imported raw materials, etc.

13.2.7. *Adjustment for fines.*—In the light of the actuals non-saleable fines have been assessed as equivalent to 3.25 per cent in the case of Birla Jute and to 1.72 per cent in the case of Industrial Chemicals of their saleable production and costs have been proportionately adjusted.

13.2.8. *Return.*—A return of 12 per cent has been allowed on actual capital employed, of which the working capital component has been taken as equivalent to five months' cost of production, excluding depreciation.

13.3. *Freight disadvantage.*—For making a proper comparison of fair ex-works price of the indigenous product with the landed cost exduty of imported calcium carbide to determine the quantum of protec-

tion, as was done at the time of the last inquiry, we have duly taken into account the need for adjusting the price of the indigenous product as delivered at ports to make it comparable with the c.i.f. price of the imported product at principal port towns. The factory of Birla Jute is situated in close proximity to the port of Calcutta and most of its products is distributed in and around that city, involving low transport and handling charges for short distances. In the case of Industrial Chemicals, however, since its consuming markets are situated far away from its factory it suffers a substantial freight disadvantage as compared with the imported product. Necessary provision has, therefore, been made to cover the freight disadvantage on the basis assessed by us, at Rs. 10 per tonne in the case of Birla Jute and at Rs. 90 per tonne in the case of Industrial Chemicals. Thus the fair ex-works prices, inclusive of the freight disadvantages for the two units work out as follows:

	Rs. per tonne	
	Birla Jute Mfg. Co. Ltd.	Industrial Chemicals Ltd.
Fair ex-works price	934·73	830·29
Add freight disadvantage	10·00	90·00
Fair ex-works price inclusive of freight disadvantage for assessing the quantum of protection.	944·73	920·29
Average for the two units	932·51	

We have taken this average as the estimated fair ex-works price for the purpose of determining the quantum of protection required by the industry. As calcium carbide has been decontrolled we have refrained from determining the fair selling prices which would have to take into account grade-wise allocation of costs and other relevant factors like selling commission.

Comparison of fair ex-works price of indigenous calcium carbide with landed cost of imported product

14. The following table shows the comparison of estimated fair ex-works price of indigenous calcium carbide, inclusive of freight disadvantage, and landed cost ex-duty of the imported product calculated on the basis of the f.o.b. quotation referred to in paragraph 12.

(Rs. per tonne)

1. Average of fair ex-works prices, inclusive of freight disadvantages, of the two units.	932·51
2. C.i.f. price of imported calcium carbide	562·00
3. Clearing charges	15·00
4. Landed cost ex-duty	577·00
5. Difference between 1 and 4	355·51
6. Difference as percentage of c.i.f. price	63.26

15. The foregoing table indicates that the indigenous industry still suffers from a substantial disadvantage *vis-a-vis* the price of imported calcium carbide. The fair ex-works price plus freight disadvantage of the indigenous product compared with landed cost of imports ex-duty shows a difference of 63.26 per cent of the c.i.f. price as the quantum of duty required for placing the indigenous product on par with imports. In other words the comparison indicates the need for an import duty of 63.26 per cent *ad valorem* to equate the position of the two. All the producers who have replied to our questionnaire have requested continuance of protection to the industry for a further period of three to five years on account of the higher production cost of calcium carbide in this country compared with that of overseas manufacturers. One of them also urged that the withdrawal of protection at this stage will have adverse effect on the industry and will also impair the growth of certain allied industries like plastics and other organic chemicals which use calcium carbide as the basic raw material. Most of them, however, have laid special emphasis on various measures of assistance to assure adequate supply of important raw materials of requisite quality such as hard coke and petroleum coke, cheaper power which is of vital concern to the industry, better and more economical supply of containers and so on, which have been discussed at length in paragraph 8. While most of the consumers with certain exceptions have expressed themselves in favour of continuance of protection the Directorates of Industries of some State Governments who have commented on this point have stated that the current ban on imports of calcium carbide dispenses with the need for further extension of protection to the industry, some of them pointing to the greater urgency for providing required assistance to the industry to enable it to bring down the cost of production. The D.G.T.D. has stated that since adequate capacity for meeting the full requirements of various consumers has been installed in the country and there are four producers now having a potential surplus capacity to meet the future requirements and as the import of calcium carbide stands banned for the last three years there is no necessity for continuance of protection to the industry beyond the present term. We agree that over the last three years the licensed and installed capacity of the indigenous industry has registered a significant increase quite adequate for meeting the foreseable domestic needs in the near future, while the production has also shown a satisfactory progress to catch up with the demand which has made it possible to sustain the continuance of the ban on imports. We do not, however, consider that the ban on imports which is due to financial exigencies of Government can or should be regarded as a proper substitute for tariff protection which is called for in furtherance of a scheme of developmental protection that is the basic objective of our protective tariff. The indigenous industry has developed without need for foreign technical collaboration and, in our view, has apparently come up to the desired level of expansion from the quantitative point of view. But in regard to the quality and cheapness of its products, it has yet to make up a considerable leeway. The attainment of the requisite quality is conditioned by the availability of suitable raw materials. In respect of these our present inquiry has revealed good

Measure of protection.

potentialities particularly in regard to the supply of good quality hard coke and petroleum coke and mild steel sheets from indigenous sources in the near future. It is only from such developments that the possibility of reduction in cost of raw materials will arise. We have also referred to the high cost of power which handicaps this industry in bringing down its comparative costs. The materialisation of these prospects, however, still involves an element of uncertainty and it would not, in our opinion, be fair to the industry to deprive it of protection at this juncture. On the evidence placed before us we consider that a clear picture about these potentialities will emerge in the course of the next two years after which in the light of the position then prevailing in the industry it would be possible to make a better appraisal of its need for tariff protection. A further extension of protection to the industry for at least this period will also be justified by the fact that it has already achieved a welcome degree of expansion to the extent of generating internal competition among the producing units, which in turn safeguards the interests of consumers. We do not, however, consider that any increase in the rate of the existing duty is called for, to bring it up to the level of 63.26 per cent as indicated in the table in the preceding paragraph, lest it generate complacency among indigenous producers on the pressing problem of cost reduction. We, therefore, recommend that protection to the industry should be continued for two years more till 31st December 1966 at the existing rate of duty, that is, 50 per cent *ad valorem* exclusive of surcharge.

16. Selling system, sales and selling prices.

16.1. *Selling system.*—The selling system of Birla Jute and Industrial Chemicals, the details of which are set forth in paragraphs 15.1 and 15.2.1 of our last Report (1961) has continued unchanged. Birla Jute sells the major portion of its output direct to dissolved acetylene manufacturers, its sales through zonal selling agents accounting for hardly 40 per cent. In the case of Industrial Chemicals, the entire sales are made through its sole selling agent V. D. Swamy & Co. Private Ltd., which has territorial representatives. While the need for a sole selling agent in this case is attributable to the necessity of finding out and supplying to customers in distant markets, our recommendation for reducing the commission was based on consideration of obligations which the company operating under the shelter of protection owed to the consuming industries. The company has since stated that the selling agency agreement is now in accordance with our recommendation and its representative clarified that to enable the benefit to be passed on to the consumer it is making necessary adjustments with the selling agent. Calico Mills sells carbide direct to dissolved acetylene manufacturers and also to some bulk consumers. Its distributor, Ilac Ltd., which has stockists throughout India is allowed no commission or discount on direct sales to dissolved acetylene manufacturers and consumers. The bulk of its production, however, is accounted for by its own internal consumption in the P.V.C. unit, being of the order of 42 per cent in 1961, 76 per cent in 1962 and 73 per cent in 1963. The proportions of direct sales to consumers and sales through selling agents in 1963 were 17 per cent and 18 per cent respectively. We have not received any reports about the selling system of Rajasthan Vinyl.

16.2.1. *Sales.*—A statement showing the sales of manufacturing units during the years 1961, 1962 and 1963 with an indication of the stocks held at the end of the years is given in Appendix VII. Considered in the light of the production figures set forth in paragraph 6.4. it would appear that the production of calcium carbide has been keeping pace with its sales during the past three years. While the total stocks at the end of each of the years 1961 and 1962 were 15 per cent of the output, the stock at the end of 1963 was less than 10 per cent. Except for a slight set-back in the case of Birla Jute, there has also been a progressive increase in the sales of calcium carbide by the indigenous industry over the last three years.

16.2.2. We have not received any complaints about the selling system or availability of calcium carbide from indigenous producers. The Carbide of Calcium Merchants' Association, however, complained that the quality of the supply is not uniform at all time.

16.3. *Selling prices.*

16.3.1. Prior to 16th December 1963 the prices of calcium carbide were subject to control by Government and the ex-works prices of the various grades of calcium carbide were fixed under Resolution No. Ch (1)-3(2)/61, dated 5th January 1962, at the rates given below:

Size	Price per 50 Kg.	
	50 Kg. Packing	100 Kg. Packing
	Rs.	Rs.
4/80 mm.	44·00	43·25
25/80 mm. & 50/80 mm.	46·00	45·25
15/25 mm.	39·00	38·25
4/15 mm. & 7/15	36·00	35·25

The above prices were exclusive of transportation charges from the factory, local taxes, selling commission, etc. Bulk consumers having a consumption of 10 tonnes and above per month on a regular basis were to be supplied at the ex-works selling price without any addition of selling commission. In other cases the selling commission was not to exceed Rs. 4 per 50 Kg. The above prices which remained in force upto 31st December 1962 were continued thereafter indefinitely (until further notice) by a subsequent Government Resolution No. Ch(1)-3(2)-61, dated 31st December 1962. The above two Resolutions, however, were cancelled by the Government of India by Resolution No. Ch(1)-17(91)/63, dated 16th December, 1963 under which the prices of calcium carbide have been decontrolled.

16.3.2. During the period when the price control was in force, the producers had to frame their pattern of prices in accordance with the provisions of the Government Resolution. After decontrol till the

time of our inquiry, there has been no significant change in the price situation. Birla Jute did not effect any increases in its prices. We were informed by its representative at the public inquiry that recently, under pressure of competition from other producers and particularly Rajasthan Vinyl the agents of the company were constrained to make a reduction in their prices. The representative of Indian Oxygen, however, stated that he had received a notice from the company of a possible increase in its prices in the near future. According to information furnished by Industrial Chemicals, it has made marginal increases in the prices of specific grades, but the retail selling prices have remained unchanged after decontrol. Calico Mills has under active consideration an upward revision of its prices on the expiry of its pending sales contracts and it is reported to have notified its Distributor (Ilac Ltd.) about an increase of Rs. 2 per drum of 50 Kgs. for carbide sold to them for distribution in Maharashtra there being, currently, no intention to make any change in prices for other territories. The question of an upward revision of prices does not arise in the case of Rajasthan Vinyl which commenced commercial production of carbide at the beginning of 1964. Consumers have generally complained about the high prices of indigenous carbide, compared to those of the imported product, which the producers consider to be inevitable on account of their higher production costs. In the context of the price de-control, by and large, it appears that the producers have not yet taken any undue advantage to push up prices further. While the emergence of internal competition would operate as an inhibiting force in this respect, the need for keeping a careful watch over future trends of prices will continue. Since carbide is an important industrial raw material, we cannot too strongly urge that in the discharge of their obligations to the consumers as a protected industry, the producers should at all times take particular care to ensure that their selling prices bear a reasonable relationship to costs and spare no efforts to bring down costs, in which process as stated earlier in the context of raw material and power, Government should afford them all facilities.

Summary of conclusions and recommendations.

17. Our conclusions and recommendations are summarised as under :

17.1. The total annual licensed capacity of the calcium carbide industry is 57,700 tonnes while the present installed capacity is 47,700 tonnes. The production of calcium carbide was 19,989 tonnes in 1961, 25,893 tonnes in 1962 and 26,907 tonnes in 1963.

[Paragraphs 6.2.3. and 6.4.]

17.2. The domestic demand for calcium carbide is estimated at 37,500 tonnes for 1964, 46,000 tonnes for 1965 and 57,000 tonnes for 1966.

[Paragraph 7.2.]

17.3. The Government of Uttar Pradesh should be persuaded to relax its restrictive policy and make limestone deposits at Kota available to manufacturers of calcium carbide as well which, it appears, is possible without prejudice to the interest of its cement factory.

[Paragraph 8.1.1.]

17.4. It is the spirit behind the Electricity Rules of the Government of Maharashtra which is relevant to the issue of concessional duty on electricity and if the unilateral concession offered were motivated by a desire to assist deserving industries, the request of Calico Mills—Chemical Division can be met by the State Government by a suitable amendment widening the scope of the exemption in the Rules.

[Paragraph 8.4.]

17.5. Industrial Chemicals Ltd., should not shift to "B" grade output by changing its raw materials since apart from the question of its past reputation the maintenance of its production of grade "A" with a gas yield comparing favourably with grade "B" of other producers would be necessary for this company to sustain its competitive position in distant markets.

[Paragraph 9.1.2.]

17.6. Protection granted to the calcium carbide industry should be continued for two years more till 31st December 1966 at the existing rate of duty, that is, 50 per cent *ad valorem*, exclusive of surcharge.

[Paragraph 15.]

17.7. Since calcium carbide is an important industrial raw material, its producers, in the discharge of their obligations to consumers, should at all times take particular care to ensure that their selling prices bear a reasonable relationship to costs and spare no efforts to bring down costs in which process as in case of raw materials and power Government should afford them all facilities.

[Paragraph 16.3.2.]

Acknowledgements.

18. We wish to express our thanks to the representatives of producers, consumers and importers of calcium carbide, the associations connected with the industry and Government Departments concerned who furnished us with valuable information and tendered evidence before us in connection with the inquiry.

K. R. P. AIYANGAR,
Chairman.

J. N. SEN GUPTA,
Member.

R. BALAKRISHNA,
Member.

PRAMOD SINGH,
Secretary.

BOMBAY,
Dated the 14*th April,* 1964.


सत्यमेव जयते

APPENDIX I

(*Vide* Paragraph 3.1)

List of parties to whom questionnaries/letters were issued and from whom replies were received

*Indicates those who have replied.

@Indicates those who are not interested.

A. PRODUCERS :

*1. Birla Jute Manufacturing Co. Ltd., (Calcium Carbide Division) 15, India Exchange Place, Calcutta-1.

*2. Industrial Chemicals Ltd., 175/1, Dhun Building, Mount Road, Madras-2.

*3. Travancore Electro-Chemical Industries Ltd., P.O. Chingavanam, Kottayam.

*4. Calico Mills, Chemicals and Plastics Division, Anik, Chembur, Bombay-74.

@5. The Indian Carbide Corporation Pvt. Ltd., 'Parijat', 95, Marine Drive, Bombay-2.

6. Rajasthan Vinyl and Chemical Industries, Shrirampur, Kota.

B. PRODUCERS' ASSOCIATION :

*Indian Chemical Manufacturers' Association, India Exchange (8th Floor), India Exchange Place, Calcutta-1.

C. PROSPECTIVE PRODUCERS :

*Plastic Resins & Chemicals Ltd., 15-A, Horniman Circle, Fort, Bombay-1.

D. CONSUMERS :

*1. Indian Oxygen Limited, 48/1, Diamond Harbour Road, Calcutta-27.

2. Asiatic Oxygen & Acetylene Co. Ltd., 8, Dalhousie Square East, Calcutta-1.

3. Indian Pipe Manufacturers' Association, 35, Stephen House, 4, Dalhousie Square East, Calcutta-1.

*4. Travancore Cements Ltd., Kottayam.

@5. Trichy Everest Automobiles Private Ltd., 4-A, Bird's Road, Tiruchirapalli-1.

*6. Gemini Gas Welding Works, 74, Palamkottah High Road, Tuticorin.

7. India Cements Ltd., Talaiyuthu, R.S., Tirunelveli District, Madras.

8. Shree Krishna Light Works, Manik Chowk, Ahmednagar.

*9. Bombay Mechanical Works, Baramati, District Poona.

*10. The Kolar Gold Mining Undertakings (Central Administration), Supply Department, Oorgaum P.O.

11. The Calcium Carbide Dealers' & Consumers Association, 2, Maharaja Debendra Road, Calcutta.

*12. Modi Gas and Chemicals, Modinagar, Distt. Meerut.

*13. Industrial Gases Limited, 138, Canning Street, Calcutta-1.

*14. The Directorate General of Ordnance Factories, 6 Esplanade East, Calcutta-1.

*15. Autogenous Welding and Repair Co. (P) Ltd., 63, Fergusson Road, Lower Parel, Bombay-13.

@16. Western Bengal Coal-Fields Ltd., Moira Colliery, P.O. Ukhra, Distt. Burdwan.

*17. The Controller of Stores, Southern Railway, Perambur, Madras.

E. IMPORTERS :

1. Boora Mal Amolak Ram, Diwan Hall, Chandani Chowk, Delhi-6.

2. Ghosh and Mitter, 33, Canning Street, Calcutta.

3. Shaw Wallace & Co. Ltd., 4, Bankshall Street, Calcutta-1.

4. Sadhan Bros. & Co., 13, Canning Street, Calcutta.

5. Carbide Trading Co., 13, Old China Bazar Street, Calcutta-1.

*6. Vasantrai Goverdhandas & Bros., Patharia Palace, 75, Mohamedali Road, Bombay-3.

@7. Union Carbide India Ltd., 1 & 3, Brabourne Road, Calcutta-1.

8. B. Paul and Company, Behind Imperial Bank, Delhi-6.

*9. Sridhar and Company, Mount Road, Madras-2.

*10. Dey & Brothers, 144/3, Harrison Road, Calcuttta-7.

*11. Jessop & Co. Ltd., 63, Netaji Subhas Road, Calcutta-1.

@12. Radha Kanto Doss & Sons (P) Ltd., 211, Old China Bazar Street, Calcutta-1.

13. Haranath Stores, 133-D, Netaji Subhas Road, Calcutta-1.

*14. P.N. Dutt & Sons, 195, Old China Bazar Street, Calcutta-1.

@15. Mill Products, 7/A, Clive Row, Calcutta-1.

*16. Kajaria Sons (P) Ltd., 32, Armenian Street, Calcutta-1.

@17. Bird & Co. (P) Ltd., Agency Department, 1, India Exchange Place, Calcutta-1.

*18. Hindusthan Chemical & Industrial Corporation, 22, Brabourne Road, Calcutta-1.

*19. The Carbide of Calcium Merchants' Association, 22, Brabourne Road, Calcutta-1.

F. GOVERNMENT DEPARTMENTS :

*1. The Director General, Directorate General of Technical Development, Alkalies and Allied Chemical Industries Directorate, Udyog Bhavan, Maulana Azad Road, New Delhi.

*2. The Development Commissioner, Small Scale Industries, Ministry of Industry, Udyog Bhavan, Maulana Azad Road, New Delhi.

3. The Secretary to the Government of India, Ministry of Steel, Mines and Heavy Industries, New Delhi.

*4. The Director, Indian Standards Institution, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi-1.

*5. The Secretary, Railway Board, Rail Bhavan, New Delhi.

*6. The Director, Geological Survey of India, 27-Chowringhee Road, Calcutta-73.

*7. The Collector of Customs, Bombay.

*8. The Collector of Customs, Calcutta.

*9. The Collector of Customs, Madras.

*10. The Collector of Customs, Cochin.

*11. The Secretary to the Government of India, Ministry of Petroleum and Chemicals, New Delhi.

*12. The Director of Co-ordination & Statistics, The Directorate General of Supplies & Disposals, National Insurance Building, Parliament Street, New Delhi.

*13. The Coal Controller, 1, Council House Street, Calcutta.

*14. The State Trading Corporation of India Ltd., Express Building, 9 & 10, Mathura Road, New Delhi-1.

*15. The General Manager, Durgapur Projects Ltd., Coke Oven Plant, Durgapur-1.

*16. Director of Industries, Government of Maharashtra, Sachivalaya Annexe, Bombay-32.

*17. Director of Industries, Government of West Bengal, New Secretariat Buildings, 1, Kiran Shankar Roy Road, Calcutta-1.

18. Director of Industries and Commerce, Government of Madras, Chepauk, Madras-5.

19. Director of Industries, Government of Kerala, Trivandrum.

@20. Director of Industries, Government of Rajasthan, Jaipur.

21. First Secretary (Commercial) to the Embassy of India, Koblenzor Strasse, Bonn, West Germany.

22. Counsellor (Commercial) to the High Commission of India, 'India House' Aldwych, London, England.

*23. First Secretary (Commercial) to the Embassy of India, No. 2, Godot-De-Mauroy, Paris 9, France.

G. STATE GOVERNMENTS :

1. The Chief Secretary to the Government of Andhra Pradesh, Hyderabad.
2. The Chief Secretary to the Government of Assam, Shillong.
3. The Chief Secretary to the Government of Bihar, Patna.
4. The Chief Secretary to the Government of West Bengal, Calcutta.

@5. The Chief Secretary to the Government of Gujarat, Ahmedabad.

6. The Chief Secretary to the Government of Jammu & Kashmir, Srinagar.

@7. The Chief Secretary to the Government of Kerala, Trivandrum.

@8. The Chief Secretary to the Government of Madhya Pradesh, Bhopal.

9. The Chief Secretary to the Government of Madras, Madras.
10. The Chief Secretary to the Government of Maharashtra, Bombay.

@11. The Chief Secretary to the Government of Mysore, Bangalore.

@12. The Chief Secretary to the Government of Orissa, Bhubaneshwar.

@13. The Chief Secretary to the Government of Punjab, Chandigarh.

@14. The Chief Secretary to the Government of Rajasthan, Jaipur.

*15. The Chief Secretary to the Government of Uttar Pradesh, Lucknow.

@16. The Chief Commissioner, Delhi Administration, Delhi.

@17. The Chief Commissioner, Himachal Pradesh, Simla.

H. OTHERS :

*1. Tinplate Fabricators' Association, India Exchange (7th Floor), India Exchange Place, Calcutta-1.

*2. The Assam Oil Co., Digboi P.O.

*3. Indian Carbon Ltd., 6, Old Post Office Street, Calcutta-1.

4. Indian Refineries Ltd., Link House, Mathura Road, New Delhi-1

APPENDIX II

(*Vide* Paragraph 3.2)

List of factories visited by the Commission and its Officers

Name of the factory	By whom visited	Date of visit
1. Industrial Chemicals Ltd., Talaiyuthu.	1. Shri K. R. P. Aiyangar, Chairman	8-2-64
	2. Shri A. K. Banerjee, Asstt. Cost Accounts Officers.	4-1-64 to 9-1-64
	3. Shri M. S. Marballi, Research Officer (Chemicals)	24-1-64
2. Travancore Electro-Chemical Industries Ltd., Chingavanam	Dr. R. Balakrishna, Member	1-3-64
3. Birla Jute Manufacturing Co. Ltd., Calcutta.	1. Shri J. N. Sen Gupta, Member	12-3-64
	2. Shri S. R. Mallya, Cost Accounts Officer.	24-1-64 to 30-1-64
	3. Shri S. Saha, Technical Director (Chemicals).	1-2-64
4. Calico Mills, Chemicals and Plastics Division, Bombay.	1. Shri K. R. P. Aiyangar, Chairman	18-3-64
	2. Shri J. N. Sen Gupta, Member	18-3-64
	3. Dr. R. Balakrishna, Member	18-3-64
	4. Shri S. Saha, Technical Director (Chemicals).	29-2-64
	5. Shri Gyan Prakash, Assistant Director (Investigations).	29-2-64
	6. Shri M. S. Marballi, Research Officer (Chemicals).	29-2-64

APPENDIX III

(*Vide* Paragraph 3.3)

List of persons who attended the Commission's public inquiry on 31st March 1964

A. PRODUCERS :

1. Shri M. C. Agarwal 2. Shri C. B. Nevatia	Representing	Birla Jute Manufacturing Co., 15, India Exchange Place, Calcutta-1.
3. Shri N. Krishnamoorthi 4. Shri A. Ananthanarayanan 5. Shri Kasivishwanathan	,,	Industrial Chemicals Ltd., Dhun Building, 175/1 Mount Road, Madras-2.
6. Shri H. T. Bhavanani 7. Shri N. N. Chatterjee 8. Shri G. V. Krishna Rao	,,	Calico Mills, Chemicals and Plastics Division, Anik-Chembur, Bombay-74.
9. Shri M. S. Bhandarkar 10. Shri S. K. Somani 11. Shri J. V. Mehta	,,	Travancore Electro-Chemical Industries Ltd., P. O. Chingavanam, Kottayam.

B. PROSPECTIVE PRODUCERS :

12. Shri B. M. L. Moorthy	,,	Plastic Resins and Chemicals Ltd., 15-A, Horniman Circle, Bombay-1.

C. ASSOCIATIONS :

13. Shri V. N. Shah	,,	Indian Chemical Manufacturers' Association, India Exchange Place, Calcutta-1.
14. Shri P. H. Maniar	,,	Chemical and Alkali Merchants' Association, Himalaya House, Palton Road, Bombay-1.

D. CONSUMERS :

15. Shri V. N. Swamy 16. Shri T. N. Mahadevan	,,	Indian Oxygen Ltd., 48/1 Diamond Harbour Road, Calcutta-27.
17. Shri F. D. Mehta	,,	Autogenous Welding and Repair Co. P. Ltd., 63, Fergusson Road, Bombay-13.

E. IMPORTER :

18. Shri V. G. Pandhi	,,	Vasantrai Goverdhandas and Bros., Patharia Palace, 75, Mohamedali Road, Bombay-3.

F. GOVERNMENT DEPARTMENTS :

19. Shri P. K. Seshan, Development Officer (Alkalies) 20. Shri P. N. Jingam . .	Representing	Directorate General of Technical Development, Udyog Bhavan, Maulana Azad Road, New Delhi.
21. Dr. A. P. Subramaniam, Superintending Geologist-in-charge	,,	Geological Survey of India, 27, Chowringhee Road, Calcutta-13.
22. Shri B. Bir Bakashi, Assistant Coal Controller.	,,	Coal Controller, 1, Council House Street, Calcutta.
23. Shri Maihman Singh, Assistant Director of Supplies.	,,	Director General of Supplies and Disposals, National Insurance Bldg., Parliament Street, New Delhi-1.
24. Shri B. R. Dave, Inspector of Explosives	,,	Inspector of Explosives, incharge, Explosives Department (West Circle), Industrial Assurance Building, Churchgate, Bombay-1.
25. Shri K. P. Revankar, Appraiser.	,,	Collector of Customs, Bombay.
26. Shri S. Subrahmanyan .	,,	Indian Standards Institution, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi-1.

G. OTHERS :

27. Shri D. K. Baheti . .	,,	Indian Aluminium Co. Ltd., 31, Chowringhee Road, Calcutta-16.
28. Shri H. V. Kuvavala .	,,	Hasambhoy Jetha, Opp. Byculla Goods Depot, Bombay-27.
29. Shri J. P. Bapasola . . 30. Shri S. S. Hussain .	,,	Bharat Barrel and Drum Manufacturing Co. Pvt. Ltd., 95, Furgusson Road, Lower Parel, Bombay-13.
31. Shri R. G. Damani . . 32. Shri B. L. Goenka .	,,	Tinplate Fabricators' Association, India Exchange, 7th Floor, India Exchange Place, Calcutta-1.

APPENDIX IV

(*Vide* Paragraph 6.4)

Statement showing size-wise production of Calcium Carbide during the years 1961, 1962 *and* 1963

(In tonnes)

Sizes	Birla Jute Mfg. Co. Ltd.			Industrial Chemicals Ltd.			Calico Mills, Chemicals Division			Total		
	1961	1962	1963	1961	1962	1963	1961*	1962	1963	1961	1962	1963
1	2	3	4	5	6	7	8	9	10	11	12	13
4/80 mm . . .	3,790	6,489	5,675	4,964	5,301	6,322	857	2,701	4,913	9,611	14,491	16,910
25/80 mm . . .	3,697	3,782	4,570	510	1,219	1,706	1,259	978	233	5,466	5,979	6,509
50/80 mm . . .	..	..	..	884	1,086	304	1,108	1,258	595	1,992	2,344	899
15/25 mm . . .	490	476	383	183	522	256	351	365	139	1,024	1,363	778
4/15 mm . . .	276	276	157	32	..	..	..	..	..	308	276	157
7/15 mm . . .	..	..	..	173	104	67	231	180	70	404	284	137
Others	253	336	316	258	189	354	673	631	847	1,184	1,156	1,517
TOTAL	8,506	11,359	11,101	7,004	8,421	9,009	4,479	6,113	6,797	19,989	25,893	26,907

NOTE.—*As Calico Mills commenced production in February 1961 only its figures for 1961 relate to 11 months *i. e.* from February to December, 1961.

APPENDIX V

(*Vide* Paragraph 9.1.1)

Extract from I.S.I. Specification 1040-1960 (*Revised*) *for Calcium Carbide*

3. *Qualities*

3.1 There shall be two qualities of the material, namely, Quality A and Quality B.

4. *Graded Sizes*

4.1 The material shall be graded so that the sizes of pieces in each graded size (see Table I) are within one of the following limits :

mm	mm
1 to 2	7 to 15
2 to 4	15 to 25
4 to 7	25 to 50
	25 to 80
4 to 15	50 to 80
4 to 80	80 to 120

5. *Sampling*

5.1 Representative samples of the material shall be drawn and adjudged as prescribed in Appendix A.

6. *Requirements*

6.1 Sieve Analysis--When tested according to the method prescribed in Appendix B, all the material contained in original and previously unbroken and unopened factory packages, shall pass through the sieve having round holes with diameter equal to the larger dimension indicated by the graded size. The material shall also comply with the requirements of Table I.

TABLE I

Sieve Analysis of Calcium Carbide, Technical

(Clauses 4.1 and 6.1)

Graded Size	Characteristic	Requirement
(1)	(2)	(3)
mm		
1— 2 2— 4 4— 7	Retained on the sieve having round holes of the size equal to smaller dimension, per cent by weight, *Min.*	80

(1)	(2)	(3)
4— 15	Retained on the sieve having round holes equal to 7 mm per cent by weight, *Min.*	70
	Dust, per cent by weight, *Max.*	5
4— 80	Retained on the sieve having, round holes equal to 15 mm., per cent by weight, *Min.*	75
	Dust percent by weight, *Max.*	5
7— 15 15— 25 25— 50 25— 80 50— 80 80—120	Retained on the sieve having round holes of the smaller dimension, per cent by weight, *Min.*	85
	Dust, per cent by weight, *Max.*	5

6.2. Gas Yield—When tested according to the method prescribed in Appendix C, the material shall yield the volume of gas (measured dry or corrected to dry gas basis) calculated at 27°C and 760 mm pressure, appropriate to its quality as specified in Table II. Material within the tolerance of *minus* 5 per cent shall be deemed to comply with the requirement of gas yield given in Table II.

TABLE II

Gas Yield of Calcium Carbide, Technical

Graded Size	Gas Yield	
	Quality A	Quality B
(1)	(2)	(3)
mm	l/Kg.	l/Kg.
1— 2	257	236
2— 4	273	251
4— 7	287	267
4— 15	287	267
7— 15	301	276
4— 80	303	281
15— 25	311	288
25— 50	311	288
25— 80	311	288
50— 80	311	288
80—120	311	288

6.3. When tested according to the methods prescribed in Appendix D, acetylene gas obtained from the material shall also comply with the requirements given in Table III. References to the relevant clauses of Appendix D are given in Col. 5 of the table.

TABLE III

Requirements for Acetylene Gas Evolved

Sl. No.	Characteristic	Requirement for		Method of Test (Ref. to Cl. No. of Appendix D)
		Quality A	Quality B	
(1)	(2)	(3)	(4)	(5)
(i)	Acetylene (C_2H_2), per cent by volume, *Min.*	99·0	99·0	D-1
(ii)	Sulphur compounds (as H_2S), per cent by volume, *Max.*	0·15	0·15	D-2
(iii)	Phosphorus compounds (as PH_3), per cent by volume, *Max.*	0·06	0·08	D-3
(iv)	Arsenic compounds (as AsH_3), per cent by volume, *Max.*	0·001	0·001	D-4
(v)	Nitrogen compounds (as NH_3), per cent by volume, *Max.*	0·10	0·10	D-5

6.3.1. The acetylene gas produced from the material shall contain no impurities whether specified in this standard or not which, either alone or in admixture with air, would render the gas liable to spontaneous ignition.

NOTE :—Spontaneous ignition does not cover ignition affected by flame, spark or abnormal conditions of handling and use of reagents other than water or moisture.

APPENDIX VI

(*Vide* Paragraph 10.1)

Statement showing imports of calcium carbide during the years 1961, 1962 *and* 1963

Countries from which imported	1961		1962		1963	
	Quantity	Value	Quantity	Value	Quantity	Value
	Kgs.	Rs.	Kgs.	Rs.	Kgs.	Rs.
Netherlands . .	155,250	131,546	50,000	30,000	..	..
Yugoslavia . . .	464,473	254,202	950	494	..	..
Rumania . . .	19,000	9,210	..	..	..	..
France . . .	861,560	440,526	..	..	..	..
West Germany . .	5,000	7,629	..	..	1,500	986
Poland . . .	7,000	3,921	..	..	..	..
Sweden . . .	50,600	32,457	..	..	..	..
U. K.	45,808	37,445	10,135	5,812	55,959	28,471
Small value transactions	38,288	22,979	..	..	..	..
TOTAL .	1,646,979	939,915	61,085	36,306	57,459	29,457

APPENDIX VII

(*Vide* Paragraph 16.2.1)

Statement showing sales during and stock sat the end of 1961, 1962 *and* 1963

(In tonnes)

Year	Sales during				Stocks at the end			
	Birla Jute	Industrial Chemicals	Calico-Mills	Total	Birla Jute	Industrial Chemicals	Calico-Mills	To
1	2	3	4	5	6	7	8	9
1961 .	8,117	7,038	3,425	18,580	1,022	889	1,054	2,965
1962 .	11,378	7,737	5,927	25,042	1,003	1,572	1,239	3,814
1963 .	10,997	9,474	7,670	28,141	1,107	1,107	366	2,580

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