

Leather shoes

91. By mid 1955 there were 12 organised factories which were fully or partially mechanised. One of these factories is quite large, and all but one are in West Pakistan. It is estimated that these factories have an investment of about 20 million rupees in productive capital, and a capacity of 15 million pairs of leather shoes per year. The cottage and small-industry sector turns out about 12 million pairs a year, giving a total capacity of about 27 million pairs. The annual footwear requirements given by various authorities and the representatives of the trade are very conflicting. After reconciling these figures and making an analysis of our own, we estimate the requirement of leather shoes at about 25 million pairs per annum for the Plan period.

92. An investment of Rs. 1.5 million is allowed for a mechanized shoe factory in East Pakistan with a capacity of 1.25 million pairs per year. Another 2 million rupees is allowed for the modernization of existing units.

RUBBER PRODUCTS

93. Unfortunately the rubber products industry now depends entirely on imported rubber. There are reported to be places in East Pakistan where natural rubber can be grown. One report, prepared by a private industrialist, estimated that 40,000 acres of land could produce 6,000 tons of rubber per year within 8 years. Because we understand that large rubber users are predicting a world-wide shortage of natural rubber within the next few years, we recommend that the Government should take action to see that the possibility of cultivating rubber in East Pakistan is thoroughly explored. It may also be practical to produce synthetic rubber from Sui gas, but this possibility should not interfere with the growing of rubber in East Pakistan, since there will probably continue to be a good export market for natural rubber.

The rubber products industry consists mainly of cycle tyres and tubes, rubber-soled canvas and all-rubber shoes, and retreading of automobile tyres. Hose pipes and brake linings, rubber sheets, tubes, matting and sundry other goods are also manufactured.

Cycle tyres and tubes

94. There was practically no rubber industry before partition, and the production of cycle tyres and tubes was non-existent. In June 1955 there were 12 units engaged in the manufacture of cycle tyres and tubes, with a capacity to produce 1 million cycle tyres and 2 million cycle tubes per year. Productive capital of 4.7 million rupees was estimated to have been invested in these units. The Plan provides a sum of 1.2 million rupees for the modernisation of the existing units. Since capacity now exceeds estimated requirements, no investment for increased capacity is provided.

Motor tyres and tubes

95. One Karachi company has already invested Rs. 2.0 million in equipment with capacity to produce 100,000 motor tyres and 120,000 motor tubes per year, and we are providing for additional investment of Rs. 1.4 million. The value of the product of this plant is estimated to be Rs. 12.3 million. By mid 1955 two factories were retreading old tyres, but not producing new ones. They have an estimated capital of 200,000 rupees invested in retreading machinery and the Plan provides another 800,000 rupees for additions to this equipment. The capacity for retreading is expected to increase from 7,000 tyres to 21,000 tyres per year by 1960.

Rubber-soled canvas shoes

96. In June 1955 there were 7 units, 4 in West and 3 in East Pakistan with an annual effective capacity of 9 million pairs, in which a capital of Rs. 3.5 million had been invested. The Plan provides one million rupees for modernisation of the existing units only; no new capacity is considered necessary.

Other rubber products

97. This covers a variety of articles, including household and surgical goods, toys and hose pipes. By mid 1955 there were 23 units, most of which also produce either cycle tyres or rubber shoes. Capital of Rs. 1.5 million had been invested in a capacity to produce 1,275 tons of various articles. As the capacity is surplus to the requirements of the country, and the industry is mainly dependent on imported raw materials, no investment in increased capacity is expected.

CHEMICAL INDUSTRIES

Sulphuric acid

98. Sulphuric acid is an essential raw material in a wide variety of basic industries including fertilisers, chemicals, petroleum refining, paper and rayon. The consumption of sulphuric acid is sometimes used as an index of industrial activity. Its cost is very high in Pakistan today because of the small quantities produced, and limitations on imported sulphur. This may have a constricting effect on the development of using industries. A basic technical-economic study is required to determine the cheapest and best process for making sulphuric acid under local conditions. It is possible that the process of producing sulphuric acid from gypsum in conjunction with cement is economically feasible. These matters should be studied before the increased capacity we recommend is commenced.

99. In June 1955 there were 3 modern units and 2 very old units, with a total annual capacity of 12,330 tons per year. Most of the output of two of the modern units (Lyalpur and Chandragona) is expected to be used on the spot; only 3,000 tons from the one in Karachi, and 330 tons from the old plants at Sukkur and Rawalpindi are available for commercial purposes. The Plan provides for the establishment of two new 3,000-ton plants, one in each Wing, to increase the capacity by another 6,000 tons per annum at an investment cost of 2.5 million rupees. Investment in these plants is expected only towards the end of the Plan period. The total effective capacity will then amount to 18,330 tons per annum. A sum of 200,000 rupees is also provided in the Plan for modernising existing plants.

Soda ash

100. Soda ash is used primarily in the making of glass, and in textile finishing. In June 1955 there was only one soda ash plant in Pakistan. It is located at Khewra in the salt range, and has a rated capacity of 25,000 tons per annum. Its average production is about 24,000 tons. This is not sufficient to meet present requirements because some is being imported, and the market price is very high. Since the investment programme contemplates increased capacity in both glass making and textile finishing, additional quantities of soda ash will have to be made available. The country is well-endowed for the production of soda ash, since the main ingredient is common salt. The Salt Range provides one of the purest deposits of rock salt in the world, and sea salt is produced in abundance in West Pakistan. The continued import of this product is therefore not desirable.

In the following paragraphs on caustic soda, is described the Solvey-process caustic soda plant which it is proposed to commence as soon as possible. This plant will also produce 40,000 tons a year of unconverted soda ash. This, in addition to what is now being produced, is expected to meet requirements for some time.

Caustic soda

101. The principal users of caustic soda in Pakistan today are the soap and paper industries. In June 1955 there were two plants in operation, each of 3,000 tons a year capacity. One is at the Karnaphuli paper mills, which use its entire output, and the other is at Nowshera, where most of its production goes directly to the cardboard plant located there. The country is at present importing 8-9000 tons per year for the soap industry and miscellaneous users.

102. We recommend that the country be made self-sufficient in this product as soon as possible. A 200 tons a day Solvay-process plant is recommended to be built during the Plan period. At the first stage of the production process, this plant will yield 75,000 tons of soda ash of which 35,000 tons will be converted to 25,000 tons of caustic soda. The remaining 40,000 tons of soda ash will be available for use as such or in other forms. Of the 25,000 tons of caustic soda produced, 7,000 tons will be purified to rayon grade for use in the viscose rayon plant described below. The remaining 18,000 tons will be available to the market to replace imports. The plant will be located near Karachi, where it will have the advantage of operating on the basis of low-cost sea salt. A second plant is provided for East Pakistan. This is to be a 3,000 ton per year electrolytic plant. The chlorine by-product of this plant will be used for the production of bleaching powder, and by the D.D.T. plant which is described below.

103. The cost of the West Pakistan plant is estimated at Rs. 38.5 million and is included in the private sector. The cost of the East Pakistan plant is set at Rs. 3.5 million and is listed in the public sector among the projects assigned to the P.I.D.C. The foreign exchange component of the total investment is Rs. 32.5 million. The value of the annual production of these plants will be about Rs. 28 million.

Fertilisers

104. The country requires a very large amount of cheap fertilisers for increasing crop production. With this object in view the Government through the P.I.D.C. has built two fertiliser factories one for ammonium sulphate with 50,000 tons per annum capacity at Daud Khel and another for super-phosphate with 12,000 tons per annum at Lyallpur. The Plan also provides for the construction of two new nitrogenous fertilizer plants, one in each Wing, to be based on natural gas. The West Pakistan fertilizer plant at Multan will be capable of producing 1,03,000 tons of ammonium nitrate and 59,200 tons of urea, equal in nitrogen content to 2,50,000 tons of ammonium sulphate. The other fertilizer plant in East Pakistan is designed to manufacture 1,17,000 tons of urea equivalent to 2,50,000 tons of ammonium sulphate. The plan provides Rs. 332.0 million for completion of the Daud Khel plant and construction of the two new plants based on natural gas. The total effective capacity on the completion of these plants would, therefore, be 12,000 tons of super-phosphate, 50,000 of ammonium sulphate, 1,03,000 of ammonium nitrate and 1,76,200 tons of urea. We estimate the value of this output at Rs. 178.4 million per annum.

105. A sum of Rs. 55.5 million was invested in the plants at Daud Khel and Lyallpur before the beginning of the Plan period. The Plan provides for a further investment of Rs. 332 million, to cover the cost of completing these two plants and most of the cost of the new plants for producing fertilizer from natural gas. Construction of these plants is expected to require four years, of which the fourth year will fall in the second Plan period. The provision made in the present Plan, therefore, is for the part of the cost that is to be incurred in the first three years. The foreign exchange component of the total investment provided for the Plan period is Rs. 245 million.

Pharmaceuticals and fine chemicals

106. By mid 1955 there were about 56 factories in the country producing a wide variety of fine chemicals, drugs, galenicals, extracts and tinctures. The production of these items was valued at about 8 million rupees per year. Approximately 20,000 pounds of santonine and ephedrine were produced annually from the artimisia and ephedra herbs found wild in and around the Kurram valley. At partition only 6 factories in the country produced galenicals and syrups. The number has since grown to 33 with a capacity of about 0.2 million gallons per year. Quality is not always good, however, and the medical profession is sometimes reluctant to prescribe them. There are a few modern factories now producing injections and tablets of acceptable quality, but their production is not sufficient to meet requirements.

107. The Plan provides a total of 20.4 million rupees for increasing the capacity of this industry. Ten million rupees is for a large pharmaceutical and drug factory to be built by the P.I.D.C. in East Pakistan. Another 0.4 million rupees is to complete the P.I.D.C.'s investment in the Kurram Chemical Company, bringing the total

P.I.D.C. investment in this industry to 10.4 million rupees during the Plan period. Another 10 million rupees is provided for further development of the industry in West Pakistan. It is expected that a fine chemicals industry, based on more readily available sulphuric acid, will develop soon to produce alums, sulphates and chromium salts, especially sodium dichromate, which is required to the extent of 6-7,000 tons per year by the tanning industry. In addition to the above provision for increased capacity, the Plan also provides 2.0 million rupees for modernising existing plants.

Penicillin

108. The only antibiotic that is universally used for a number of diseases is penicillin, for which a plant has been proposed to be established in collaboration with the World Health Organisation by the P.I.D.C. The capacity of the plant will be 8 million mega-units per annum, which is approximately what is being imported now. The technical personnel and part of the equipment will be supplied by the W.H.O., who will also train the Pakistani personnel eventually to operate the plant. A provision of 9.1 million rupees is calculated to cover the cost of the plant, which will produce penicillin worth about 9.0 million rupees annually. The foreign exchange component of the investment is estimated at 5.7 million rupees. A tentative allocation of Rs. 15 million has also been made for the creation of an antibiotics plant in East Pakistan, pending the preparation of a definite scheme.

Dyes

109. Imports of organic dyes have been large during the last 6 years, and their consumption is still increasing. The technical consultants of the P.I.D.C. on examination found that two particular dyes, congo red and sulphur black, have been imported in large quantities as Table 11 shows.

TABLE 11
Import of congo red and sulphur black, 1951-56

(Lakh rupees)

	1951		1952		1953		1954		1955		1956	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Congo red '000' lbs.	117.6	7.4	315.4	6.2	187.4	2.7	448.4	7.6	175.3	4.3	424.4	9.8
Sulphur black '000' lbs.	441.2	6.2	844.2	10.6	279.4	3.5	704.4	10.3	556.2	7.4	542.1	9.3

(Source : C. S. O.)

110. The dye-stuff industry is highly complex, and involves not only trade secrets and patents but the existence of an organic chemical industry which is non-existent in Pakistan so far. However, as a result of investigation, two firms of dye manufacturers advised that congo red and sulphur black could be produced in this country by importing some intermediates and finishing them here. They prepared a scheme for the construction of a factory for the manufacture of 250 tons of congo red and 300 tons of sulphur black per year as a beginning. The capital proposed in the schemes is Rs. 5.9 million, of which the consultant companies will subscribe 30 per cent, the balance of 70 per cent being provided by the government through the P.I.D.C. According to the scheme, the P.I.D.C. expect to import about 1.5 million worth of intermediates, etc. and produce dyes worth Rs. 2.9 million. A tentative allocation of Rs. 5.2 million has also been made for the establishment of a plant in East Pakistan, pending the preparation of a definite scheme.

Faints and varnishes

111. In June 1955 there were 18 paint and varnish factories in Pakistan, of which 6 were of fair size. They were producing wet and dry lead paints, hubbacks, varnishes, lacquers and distempers in a number of qualities and a variety of colours. The capacity of these 18 units was estimated at 36,000 tons per annum. In spite of production being less than capacity, superior grades of paints and varnishes have been imported as shown in table 12.

TABLE 12
Paints and Varnishes imports 1951—56

(Lakh rupees)

	1951	1952	1953	1954	1955	1956
Varnishes, enamels ...	4.48	8.77	5.64	2.74	5.72	4.99
Moist paints coloured ...	11.09	18.12	12.06	1.85	0.30	2.47
Other paints and varnishes	27.86	32.13	17.51	24.56	29.62	35.23
	43.43	59.02	35.21	29.15	35.64	42.69

Source : C.S.O.

112. Most of the raw materials required are not found locally. Some of the pigments are available in an unprocessed state but their utilisation is not without difficulties. Only small amounts of linseed oil, castor oil and tung oil are available in the country. Rosin and vegetable turpentine and mineral turpentine are, however, manufactured in the country, but not in sufficient quantity. Containers are very important for the industry and are made locally from imported sheets. Approximately 75 per cent of the raw materials used in the paint and varnish industry are imported, chiefly from India. A sum of Rs. 1.9 million has been provided for the modernisation of existing plants in West Pakistan. No paints and varnishes are produced in East Pakistan. Provision is made in the private sector for the construction of 16,000 tons of new capacity in that Wing, with an investment of Rs. 5 million.

Matches

113. There were 3 large organised match factories in Pakistan before independence, one in East and two in West Pakistan. Matches were also made on a cottage industry scale. At present, there are 18 units with a total capacity of 13.9 million gross boxes (20 and 30 sticks). Many of the raw materials, especially chemicals, are not found in Pakistan. Suitable wood is abundant in East Pakistan, and there are possibilities of finding good quality wood in West Pakistan. As the existing capacity is sufficient to meet the requirements of the country for the time being, no new capacity is recommended during the Plan period. A provision of Rs. 1.8 million has been made for modernisation only.

Soap

114. There was no organised large-scale soap manufacture in Pakistan before independence, although soap was being produced on a cottage scale by cold and semi-boiled processes. Since then 6 factories (4 in West Pakistan and 2 in East Pakistan) have been established, with a total capacity of 25,000 tons of washing and toilet soap. The productive capacity in East Pakistan is 1,500 tons of toilet soap, 3,000 tons of washing soap

and 450 tons of glycerine. The units in West Pakistan have a capacity of 4,500 tons of toilet soap, 16,000 tons of washing soap, and 250 tons of glycerine. Production has never reached capacity, because of a shortage of raw materials, especially tallow and vegetable oils. Approximately 60 per cent of capacity—15,000 tons of toilet and washing soap—is produced annually. A provision of Rs. 2·9 million has been made for modernization of existing plants. Another Rs. 1·5 million has been provided to construct additional capacity for the production of toilet soaps in East Pakistan.

Rayon (art silk) and cellophane

115. Rayon cloth has become a necessary consumer's item in Pakistan. Even in the smallest village it is in great demand for holiday dress and as a symbol of luxury. In the absence of real silk there is nothing that can take its place. Women especially demand it because it holds brilliant colours, and is something different from the cotton cloth of everyday life. By objective standards it is a poor fabric for hot climates, since it holds the body heat, washes poorly, and loses shape. Nevertheless, it is in such demand that it now sells for twice the price of best quality cotton cloth, and it seems unlikely that fine cotton cloth will displace rayon as the average man's luxury cloth.

116. The power-loom weavers who depend on rayon yarn as a raw material, and the consumers who pay exorbitant prices for rayon cloth have been vocal in directing attention to the evils resulting from the restricted import of rayon yarn. The average rate of usage of rayon yarn and cloth during the period 1952—54 has been Rs. 21·24 million per annum. Imports of Rs. 21·90 million were made during 1956. This is the equivalent of 11·7 million pounds of rayon yarn, and represents our estimate of a justifiable consumption level in a period of national austerity.

117. A plant to produce rayon yarn and cellophane from cotton linters or other domestic materials is recommended. We suggest that this plant should operate on domestic raw materials and not on imported wood pulp. It is also recommended that viscose rayon and not acetate should be produced. Viscose rayon has a higher wet strength, dyes easier, and does not suffer from excess heat in ironing as much as does acetate rayon. An economic unit produces 10 tons a day of rayon filament and 5 tons a day of cellophane. It must be an integrated plant, producing its own major chemical constituents with the exception of caustic soda. It would thus contain a linters plant, viscose plant, spinning plant, sulphuric acid plant, carbon disulphide plant, cellophane plant, air-conditioning plant, and steam and power plant. The cost of this industrial complex would not be less than Rs. 70·2 million of which about Rs. 45 million would be foreign exchange. The value of the product, both filament and cellophane, would be about Rs. 31·3 million per year. Although this plant would produce only 7·2 million lbs. of rayon yarn per year, and thus fall short of the estimated requirements by 4·5 million lbs., we do not recommend that a second plant should be built in the Plan period. Present requirements do not quite justify two units of economic size. Furthermore, the investment is so large, and the foreign exchange component so high, that it would not be wise to start a second plant until the first plant had been in operation for some time. We therefore recommend that additional requirements should be met by imports. When a second plant is decided upon, full consideration should be given to the possibility of locating it in East Pakistan where ample supplies of wood for pulp are available.

Turpentine and rosin

118. One unit is in production at Jallo near Lahore with a small invested capital of about Rs. 0·4 million, and a capacity to produce rosin and turpentine valued at Rs. 0·9 million annually. As this unit is obsolete and unable to meet the requirements of the country for quality turpentine and rosin so widely used in paint and varnish manufacture, the P.I.D.C. in conjunction with the former N.W.F.P. Government and private interests undertook to establish another and bigger unit in a suitable place in the N.W.F.P. where soft pinewood is economically available. The total cost of this unit is to be Rs. 1·65 million. Of this amount, the P.I.D.C. and the Government of West Pakistan are contributing Rs. 0·5 million each.

D.D.T.

119. A D.D.T. plant with an annual capacity of 700 tons of hundred per cent D.D.T. has recently started production at Nowshera. This plant was built by the P.I.D.C. at a total cost of Rs. 3.5 million of which Rs. 1.2 million was contributed by the World Health Organisation. Another plant of the same type and capacity but estimated to cost slightly more because of revaluation, is provided in the Plan for East Pakistan. It will utilise chlorine from the caustic soda plant also to be established there during the Plan period. The cost of the additional plant will be about 4.3 million rupees, of which the foreign exchange component will be 2.5 million. The P.I.D.C. will undoubtedly have to take the initiative in establishing this plant.

LIQUID FUELS

Petroleum refining

120. The Attock Oil Co.'s petroleum refinery is the only plant of its kind in Pakistan. It is located at Rawalpindi—Morgah and was raised to its present production capacity of 4,500 barrels per day in several stages since it was first begun in 1922. In 1954, it processed 253,000 tons (approximately 93 per cent of capacity) of crude oil into products totalling in value some 30 million rupees. In addition to Lummus atmospheric and vacuum distilling units, this plant has Dubbs thermal cracking and catalytic polymerisation units, though these did not prove economical in operation and are standing idle. Petrol, white spirit, kerosene, diesel oils, and fuel oil are the plants' principal products. High-class lubricating oils are made by freezing and chemical (Duoso) treatment of appropriate crude fractions. Commercial liquid fuels are made by successive treatment of petrols and kerosene by acid and soda. Paraffin wax, resulting from the refining of lubricating oils is processed into candles after bleaching, or is sold as such. Processing of Joya Mair crude results in considerable recovery of bitumen, which finds a ready market for road surfacing. Individual products are sold in tank cars and barrels, or in tins of various sizes and types made in the plant.

121. The output of the Rawalpindi refinery is given in Table 13. A provision of Rs. 13.5 million is made in the Plan to increase the capacity of this plant, and another Rs. 3.6 million is provided for replacement and modernization. Further expansion of the industry depends upon the future availability of crude oils.

TABLE 13

Production of Rawalpindi oil refinery, 1949—54

Product	Unit	1949	1950	1951	1952	1953	1954	1955	1956
Motor spirit	... '000' I.G. ...	6,106	10,415	11,157	15,101	16,950	19,076	19,416	18,929
Kerosene	... „ ...	994	2,061	1,834	2,323	2,385	2,825	2,804	3,983
Mineral turpentine	... „ ...	101	104	133	181	82	111	209	172
Diesel oils : Light	... „ ...	885	1,879	2,219	3,620	5,585	5,769	7,207	8,384
High speed	... „ ...	442	417	602	2,230	3,477	6,507	6,758	6,811
Furnace oil	... „ ...	15,193	24,504	25,194	23,749	27,627	25,846	25,485	25,083
Lubricants	... „ ...	167	544	276	371	440	986	1,200	943
Paraffin	... Tons ...	N.A.	N.A.	88	157	235	483	N.A.	N.A.
Bitumen	... „ ...	N.A.	N.A.	10,000	13,760	10,140	N.A.	N.A.	N.A.

Source : Economic Survey for 1957-58 Central Government's Budget.

122. It was estimated that in 1954 the Rawalpindi refinery supplied the following approximate portion of national requirements :

									per cent.
Motor spirit	...	...	...	...	...	...	...	...	48.3
Kerosene	...	...	...	...	...	...	...	...	4.3
Diesel oils	...	...	...	...	...	...	...	...	19.5
Furnace oil	...	...	...	...	...	...	...	...	21.6
Lubricants	...	...	...	...	...	...	...	...	4.5
Solvents	...	...	...	...	...	...	...	...	2.8
Bitumen	...	...	...	...	...	...	...	...	68.3

All aviation spirit had to be imported. We suggest that consideration should be given to the possibility of importing crude oil for refining in Pakistan, either at the Attock plant, or at a new plant near Karachi.

Power alcohol

123. The Power Alcohol Ordinance prescribes that power alcohol should be mixed with petrol, up to 25 per cent by volume, for general consumption, when power alcohol is available. This mixture actually enhance the burning quality of the petrol. Since this practice will substitute domestically-produced power alcohol for imported petrol to some extent and at no great cost, it is considered to be a reasonable government policy. There is no plant in the country now capable of producing power alcohol. The stills at and around Mardan (Murree Brewery, Frontier Sugar Mills and Carew and Co.) are producing industrial alcohol from molasses. We recommend that each sugar plant should be given an opportunity to install its on power alcohol still, or convert its present still to the production of power alcohol. A sum of 6.0 million rupees is provided for this purpose 2.0 million in the public sector and 4.0 million in the private sector.

NON-METALLIC MINERAL PRODUCTS

Structural clay products

124. This sector includes all structural clay products, including bricks, tiles, and clay pipes. In addition to the numerous cottage-sized units there are 4 fairly large mechanised units with a capacity of 2,80,000 tons of bricks and tiles per year, in which a productive capital of about 8.0 million rupees has been invested. In view of the scarcity of building material like cement and iron, and the ambitious construction programme contemplated, it is considered necessary that alternate materials, actually superior in many respects, should be developed. Capacity for the production of clay drain pipe and clay sanitary pipe should be increased, not only to meet the increasing demand for these items, but also to displace some of the similar goods now being made from cement and iron. An investment of Rs. 8.5 million is provided in the Plan for setting up 2 more units, one in each Wing, to produce 30,000 tons of bricks and clay products per year, bringing the total capacity to 3,10,000 tons by 1960. A sum of Rs 1.2 million has also been provided for modernisation of the existing units

Glass

125. *Hollow-ware.* In mid 1955 there were 11 factories, with a capacity of about 20,000 tons of hollow-ware per annum, in which an estimated capital of 4.9 million rupees had been invested. Because of the use of impure and unwashed silica, shortages of other raw materials, lack of annealing chambers and sound technical knowledge, production is below capacity, and the product suffers from the usual defects of a bad-quality glass. In spite of there being a considerable margin between capacity and production, we think that the country's requirements will not be met, especially in containers of the jar and bottle type even when the present units reach

the full production level. The Plan contemplates the establishment of two up-to-date hollow-ware glass factories manned by technically qualified men which can produce high-quality glass from locally purified silica. These plants will cost about 5 million rupees each. Another 3·8 million rupees is provided for modernising the existing units. The effective capacity will increase by 18,000 tons a year, valued at 15·9 million rupees.

126. *Sheet Glass*.—At present there is no production of sheet-glass in the country. The imports have been as follows :

								Quantity Million sq. ft.	Value Rs. Million.
1951	...	...	...	...	...	...	...	5·83	1·60
1952	...	...	...	...	...	...	...	4·55	1·22
1953	...	...	...	...	...	...	...	2·44	0·38
1954	...	...	...	...	...	...	...	7·07	1·31
1955	...	...	...	...	...	...	...	2·58	0·89
1956	...	...	...	...	...	...	...	8·80	2·49

Source : Central Statistical Office.

The Plan provides for the establishment of two sheet-glass factories, one in each Wing, at a cost of 5 million rupees each, to have a capacity of 28 million sq. ft. per year, valued at Rs. 4·6 million.

127. *Scientific glass*.—Simple types of scientific glass used in school and college laboratories are capable of being produced in the country. The demand for such glass is about 2-3,000 tons per year. As the demand is small, no separate provision has been made for it in the Plan. But it has been provided that the two hollow-ware glass factories will each have a 3-4 tons capacity pot furnace to produce scientific glass, thus giving an annual capacity of about 2,000 tons. The quality of sand now known to be available in both East and West Pakistan is rather poor. It is extremely difficult to make good -quality glass from it. There are alternative sources of silica available in quartz, which is found in the Mianwali district, and in rice husks, which when burnt produce in ash of almost pure silica. It is estimated that 175,000 tons of silica could be made available from this source. The problem of gathering rice husks and burning them under suitable conditions is considerable, but the idea seems worthy of investigation, perhaps by the Council of Scientific and Industrial Research.

Cement

128. The use of cement can be considered an index of the rate of general economic development. It is the common experience of countries which are newly developing their productive potential that cement is an item in ever-increasing demand and chronically short supply. This certainly has been true in Pakistan. It has been found necessary to import increasing amounts of cement since 1951, although prior to that the country was self-sufficient, and before partition cement was actually being exported. The country is favourably endowed for cement production. The basic raw materials—limestone, clay and gypsum—are in abundant supply throughout most of West Pakistan. It remains only to choose a site where fuel and water are cheaply available. Until now this has been the major difficulty, but with the advent of natural gas the situation has improved. Further expansion of cement production should be based on the use of gas for kiln fuel.

129. Since independence cement consumption has increased from 3,25,000 tons to an estimated 7,60,000 tons in 1954-55 which was met by an indigenous production of 6,75,000 tons and the balance by import of 85,000 tons. It is expected that the consumption of cement will increase to about 1·2 to 1·3 million tons by the end of Plan period.

Table No. 14 shows the present and planned capacity for cement production. Two plants in addition to the capacity already established at Daudkhel and Hyderabad, are recommended. These are to be the expansion of present plants and their rated capacities should total at least 2,70,000 tons.

TABLE 14

Present and planned cement capacities, 1955—60

				(June 30, 1955)	Actual Capacity		
<i>Operating</i>					(Thousand tons)		
Chattak	...	...	...	...	East Pakistan	...	70
Wah	...	...	...	...	West Pakistan	...	215
Rohri	...	...	...	...	Do.	...	190
Dandot	...	...	...	...	Do.	...	75
Dalmia	...	...	...	...	Do.	...	120
				Total capacity (June 30, 1955)	...		670
<i>Completed</i>							
Daudkhel	...	...	...	...	West Pakistan	...	100
Hyderabad, phase I	...	...	...	...	Do.	...	120
Hyderabad, phase II	...	...	...	...	West Pakistan	...	120
				Total capacity by end-1956	...		1,010
<i>Recommended expansion</i>							
Daudkhel Phase II (or expansion)	...	...	...	...	...	...	150
Hyderabad Phase III (or expansion)	...	...	...	...	...	...	120
				Total capacity by mid-1959	...		1,280

130. The total expenditure for these additional plants, plus the expenditure on the Daudkhel and Hyderabad plants outstanding at June 1955 totals Rs. 79.4 million. An additional expenditure of Rs. 12.5 million is expected for the reconstruction of existing plants, especially Wah and Dalmia, bringing the total investment to Rs. 91.9 million. Of this equivalent of Rs. 53.5 million will be in foreign currencies. Although we have provided for public expenditure through the PIDC of 54.4 million rupees for cement development during the Plan period, we do not intend to indicate that the PIDC should dominate the cement development programme. Private industrialists are urged to undertake cement plant construction on their own, and the government should see that they are provided with facilities for doing so to the same extent as is the PIDC.

Cement products

131. In June 1955 there were 13 units in the country producing reinforced cement concrete pipes and cement tiles. The annual capacity of these plants was about 2.1 million running feet of R.C.C. pipe and 0.20 million square yards of cement tiles, the total being valued at about Rs. 5.0 million. The PIDC is putting up an asbestos cement sheet plant of 20 tons per day capacity at the Zeal-Pak Cement Factory. At present, asbestos must be imported. However, it is reported that deposits of high quality asbestos have been found in the former N.W.F.P. The extent of these deposits is yet to be established. One Karachi company is producing a new form of construction panel by filling reed and bamboo lattice work with cement.

The effectiveness of this board as a durable building material remains to be demonstrated. All things considered, as locally-produced cement becomes more readily available, its use for cement products such as those described above should be encouraged. The Plan provides 9.1 million rupees for increasing the capacity of this industry and Rs. 1.2 million for modernization.

Ceramics and refractories

132. Ceramics here include pottery, sanitary goods, glazed tiles and insulators; refractories include only bricks made from fire clay generally called "fire bricks". By mid-1955 there were 3 fairly large units (Karachi, Sialkot and Gujrat) making pottery and sanitary goods, which had a total capacity of 2,000 tons of goods per annum. There are also 3 units (Karachi, Lahore and Rawalpindi) with a capacity to manufacture 22,000 tons of fire bricks per year, but a doubt has been raised regarding this capacity and so the matter is being studied further. A sum of Rs. 6.8 million has been invested in the existing units. Existing capacity to manufacture pottery and ordinary fire bricks is considered adequate for the requirements of the country. We think, however, that glazed tiles and porcelain insulators should be produced in the country, as suitable raw material in the form of china clay, fire clay, and rice husks are available. We also consider it desirable to increase the capacity for sanitary goods. The programme provides a sum of Rs. 4.3 million in the private sector; Rs. 2.7 million for increasing the capacity of the above ceramics by another 1,000 tons a year, and Rs. 1.6 million for modernising the existing industry. The increased value of goods to be produced is estimated at Rs. 1.2 million.

ENGINEERING INDUSTRIES

Iron and steel

133. There is no capacity in the country at present for the production of iron and steel. There are, however, strong reasons why the domestic production of iron and steel is an important objective of public policy.

134. The returns promised by this scheme, in earnings to be obtained and foreign exchange savings to be realized per rupee of investment required, are much smaller than those from investments in other projects, such as gas pipelines, fertilizer plants, and cement plants. This fact, however, is outweighed by other considerations of public policy. In the case of steel, particularly, certainty of supply is important—to support industrial development and to contribute to national security. Indigenous production is the only means by which such certainty can be assured. An iron and steel industry, moreover, has many indirect benefits. It provides opportunities to establish other enterprises to sell goods and services to the iron and steel plants, to take its output and turn it into finished forms, to obtain knowledge and experience in a major field of industrial technology, and to experiment with the development of new materials and new techniques. Basic industry thus affords a nucleus, a training ground, and a laboratory for further economic growth.

135. In view of these considerations, the PIDC's Multan scheme was included in the Plan. It was not possible to include in the first Plan period the entire amount for the first phase (Rs. 170 million, with a foreign exchange component of Rs. 115 million). An allocation of Rs. 30 million was made, however, in the expectation that the plant could be started before the period came to an end. Since the approval of the revised Plan by the National Economic Council the possibility has been raised that there may be better and cheaper processes for producing iron and steel from the country's resources of ore and coal, than those which would be employed in the Multan scheme. If further investigation proves this to be the case, it would be necessary to reconsider the relative priority of investment in iron and steel.

Steel melting

136. In June 1955 there were three 4-1/2—6 tons electric furnaces located in Lahore, two at the Batala Engineering Company and the other at the Steel and General Mills Ltd. They had a total effective capacity of about 19,000 tons annually if operated almost continuously. They are operated on an all-scrap charge to produce mostly low-carbon steel which is rolled into bars. The Plan allows Rs. 3.0 million for the creation of