GOVERNMENT OF INDIA

TARIFF COMMISSION

REPORT ON
The Continuance of Protection to the Power and Distribution Transformers Industry

BOMBAY, 1956

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GOVERNMENT OF INDIA

MINISTRY OF COMMERCE AND INDUSTRY

NOTIFICATION

TARIFFS

New Delhi, the 4th August, 1956.

No. 11(1)-T.B./56.—In exercise of the powers conferred by sub-section (1) of section 3A of the Indian Tariff Act, 1934 (32 of 1934), as in force in India and as applied to the State of Pondicherry, the Central Government hereby raises to 27 per cent *ad valorem* plus the excise duty for the time being leviable on like articles if produced or manufactured in India, the duty on transformer oil imported with power and distribution transformers above 2,500 KVA and up to 3,000 KVA and 37·5 KV on the H. T. side (primary voltage being over 250) excluding furnace, rectifier and flame proof transformers leviable under item No. 72(3) of the First Schedule to the said Act, and any other law for the time being in force.

N. SUBRAHMANYAM,

Joint Secretary to the Government of India.

GIPN—S2—1 T. C. Bom.—4-9-56—500.

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GOVERNMENT OF INDIA

MINISTRY OF COMMERCE & INDUSTRY

RESOLUTION

TARIFFS

New Delhi, the 4th August 1956.

No. 11(1)-T.B./56.—The Tariff Commission has submitted its Report on the continuance of protection to the Power and Distribution Transformer 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) The present protective duty of 10 per cent *ad valorem* without surcharge should be continued up to 31st December, 1960. The duty should be made applicable to power and distribution transformers up to 3000 KVA and 37·5 KV on the H. T. side.

(2) As long as the quality of domestic transformers continues to be satisfactory and prices and delivery periods are reasonable, import restrictions should be so administered as to ensure the fullest utilisation of domestic capacity.

(3) The present practice of assessing the transformer oil imported with transformer at the same rate of duty as applicable to transformer oil imported separately should be continued.

(4) As it is essential to develop the ancillary industries speedily, it is not considered desirable to reduce the duty on raw materials. On the other hand, Government should investigate the capacity of various ancillary industries and encourage the setting up of new units if necessary. In cases where ancillary industries require technical assistance, Government should try to provide such assistance. The Development Wing should also provide a better liaison between the manufacturers of transformer and ancillary Products thereof.

(5) In view of the urgent need for the Standardisation of transformers, the Indian Standards Institution should give high priority to the finalisation of the proposed standards. It is also recommended that when the standards are finalised, the Central Water and Power Commission and the Development Wing in the Ministry of Commerce and Industry should prevail upon the State Governments and private electricity undertakings to order their requirements of transformers according to the standards prescribed by the Indian Standards Institution.

(6) Government should examine early the supply position of silicon steel sheets, and if the Tata Iron and Steel Company has difficulties in expanding its capacity, steps should be taken to establish alternative source of supply.

(7) As domestic manufacturers have sufficient capacity to meet domestic demand up to 3000 KVA and 37·5 KV on the H. T. side, delays in delivery should be avoidable to an appreciable extent, if the State Government accept the proposed Indian Standards when placing indents and order their requirements at least one year in advance. This will give the Central Government sufficient time to decide whether the domestic manufacturers will be able to meet the requirements of any particular State in reasonable time and license imports accordingly. It is further recommended that Government Departments should not normally delay payment beyond six months after the delivery is completed. This is important as raw materials alone constitute a large fraction of the total costs of transformers.

(8) It is reiterated that as recommended by the Commission in its 1952 Report, imports of power and distribution transformers should, in future be recorded separately in Trade Statistics by numbers and the total KVA as well as by value and that such imports should be classified by voltages on H. T. side and also by ratings as per details given in paragraph 13.1.2.

(9) The Indian Electrical Manufacturers' Association should examine the difficulties of individual manufacturers of transformers in getting adequate quantity of steel plates and sections and approach the Development Wing and the Iron and Steel Controller with concrete suggestions to remedy the present difficulties.

(10) The Sankey Electrical Stampings Limited, should review its present system of rebates and adopt uniform rates of rebates to all manufacturers, taking into consideration only two factors, *viz.*, the quantity purchased and the delivery period required. The new rates should be made known to all the manufacturers of transformers.

(11) In view of the large potential demand for D. P. C. wires in the country, the Indian Cable Company Limited and the National Insulated Cable Company Limited should try to lower the prices of D.P.C. wires and strips so as to encourage greater off-take of the standard product.

2. Government accept recommendation (1) and will take suitable steps to implement it.

3. As regards recommendation (2), the import policy is determined from time to time with reference to several factors, one of which is the development of indigenous industry. In framing the import policy in future, the recommendation of the Commission will be borne in mind.

4. Government also accept recommendations (3) to (8) and will take steps to implement them as far as possible.

5. Attention of the Indian Electrical Manufacturers Association, Calcutta, and the Sankey Electrical Stampings Limited, Bombay, is invited to recommendations (9) and (10) respectively.

6. Attention of the Indian Cable Company Limited, Calcutta, and the National Insulated Company Limited, Calcutta, is invited to recommendation (11).

ORDER

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

N. SUBRAHMANYAM,

Joint Secretary to the Government of India.

REPORT ON THE CONTINUANCE OF PROTECTION TO THE POWER AND DISTRIBUTION TRANSFORMERS INDUSTRY

Previous inquiry.

1. The claim of the power and distribution transformers industry to protection and/or assistance was referred to the Tariff Board by Government of India in the Ministry of Commerce by their Resolution No. 1-T/A(52)/49 dated 23rd December, 1950. This reference was pending with the Board when it was replaced by the Tariff Commission on 21st January, 1952 and the Commission took over this case under Section 26 of the Tariff Commission Act, 1951. After conducting the necessary inquiries, the Commission came to the conclusion that the industry should be granted protection and made the following recommendations in its Report dated 15th October, 1952 :

(1) The import duty on power and distribution transformers up to 2,500 KVA and 37·5 KV on the H.T. side (primary voltage being over 250) excluding furnace, rectifier and flame-proof transformers should be increased from the existing level of 5% *ad valorem* to 10% *ad valorem* exclusive of surcharge and should be converted into a protective duty. The protective duty should remain in force upto 31st December, 1955.

(2) The domestic producers of transformers should be given a refund of so much of the customs duty on transformer oil as was in excess of 5½% *ad valorem* on the quantity of transformer oil actually used by them in the manufacture of transformers. If, however, there were serious administrative difficulties in operating this refund, transformer oil imported with transformers should be assessed at the rate of duty applicable to transformer oil imported separately.

(3) No reduction was recommended in the import duties on silicon steel sheets, copper wires and strips, cooling tubes, bushings, insulating materials (insulating paper, bakelite tubes, leatheroid, elephantide, press-pahn, etc.) miscellaneous components like silica gel breathers, thermometers, etc.

(4) The grant of protection to this industry should be subject to the conditions that the industry would maintain its prices at a reasonable level, strive for reduction in costs and improvement in quality and endeavour to meet the domestic demand for the types of power and distribution transformers covered by this inquiry to the fullest possible extent.

The Government of India in the Ministry of Commerce and Industry, by their Resolution No. 11(1)-T.B./51 dated 30th May, 1953, accepted the above recommendations and the industry was granted protection upto 31st December, 1955. As regards recommendation (2) above, in view of the administrative difficulties in operating the refund of duty on transformer oil actually used in the manufacture of transformers, Government accepted the Commission's alternative suggestion that the transformer oil imported with transformers should be assessed at the rate of duty applicable to transformer oil imported separately. On the recommendation of the Commission, protection to the industry was continued for a further period of one year, *i.e.*,

upto 31st December, 1956 by the Indian Tariff (Third Amendment) Act of 1955.

Present inquiry.

2. The present inquiry was undertaken under section 11(e) read with Section 13 of the Tariff Commission Act, 1951, under which the Commission is empowered to inquire into and to 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.

Method of inquiry.

3.1. The Commission issued a press communique on 8th July, 1955, inviting firms, associations or persons interested in the production or use of transformers and desiring to express their views on the question of continuance of protection to the transformer industry to obtain copies of the relevant questionnaires from the Commission's office and send replies thereto. A list of firms, associations and electricity undertakings to which questionnaires were issued and from whom replies were received is given in Appendix I. The Development Wing of the Ministry of Commerce and Industry was requested to submit a detailed memorandum on the present position of the industry. The Central Water and Power Commission, New Delhi, was requested to submit a memorandum with particular reference to the present and future demand for transformers in the country. The Collectors of Customs, Bombay, Calcutta and Madras were requested to furnish the c.i.f. prices and landed costs of imported power and distribution transformers of the sizes and types manufactured in the country. Shri S. K. Basu, Cost Accounts Officer of the Commission visited the factories of Kirloskar Electric Co. Ltd., Bangalore, and the National Electrical Industries Ltd., Bombay, from 18th July to 21st July, 1955 and from 10th August to 19th August, 1955 respectively and examined the costs of production of transformers produced at these two factories.

3.2. On 10th January, 1956, Dr. S. K. Muranjan, Member, Tariff Commission visited the factory of the National Electrical Industries, Bombay and on 20th January, 1956 he visited the factory of Kirloskar Electric Co. Ltd., Government Electric Factory and Government Porcelain Factory at Bangalore. A public inquiry into the power and distribution transformer industry was held at the Commission's office in Bombay on 24th January, 1956. A list of persons who attended the inquiry and gave evidence is given in Appendix II.

Implementation of the recommendations made in 1952 on matters other than tariffs.

4.1. In addition to the recommendations referred to in paragraph 1 above, the Commission made several ancillary recommendations in its Report in 1952. The position in regard to the implementation of each of these recommendations is given below:

4.2. "The Development Wing of the Ministry of Commerce and Industry should carry out a technical investigation of the extent of facilities available at each unit with a view to obtaining more accurate data about the highest ratings upto which transformers can be produced by each unit."

The Development Wing has carried out the technical investigation and has informed us that the domestic producers can produce

transformers upto 3,000 KVA. This is corroborated by the production figures furnished by some of the manufacturers.

4.3.1. "Some of the manufacturers of transformers have stated that the indigenous stalloy sheets suffer from lack of uniformity in thickness. Tatas should try to remove this defect and also continue their efforts to produce adequate quantities of sheets with a watt loss comparable to that of high grade imported sheets."

The Tata Iron & Steel Co. Ltd., has informed us that every effort is being made to effect improvements in the directions indicated by the Commission. It has, however, pointed out that there are certain limitations to the extent to which such improvements can be effected due to (a) abnormality generally experienced in producing electrical stalloy sheets by pack rollings; and (b) the rather long intervals between successive rollings which the company cannot avoid at present.

4.3.2. "Imports of stalloy sheets and laminations should be so regulated as to promote a fuller utilisation of the domestic capacity for the production of these materials."

We have been informed that the above recommendation is taken into consideration in formulating the import policy for each licensing period.

4.3.3. "The prices quoted by the Sankey Electrical Stampings for transformer laminations are reasonable, but the firm should try to reduce the percentage of wastage in the manufacture of laminations with a view to reducing its cost."

Sankey Electrical Stampings Ltd. has informed us that as a result of an increase in the demand for laminations and the diversification of types and sizes required by the transformer industry, it has now become possible to utilise a larger proportion of the scrap waste than before. The firm claims to have passed on the benefit to consumers by means of substantial bulk rebates.

4.4.1. "The Central Glass & Ceramic Research Institute, Calcutta, should try to bring about improvement in the quality of the indigenous bushings by giving the porcelain factories necessary technical advice and assistance."

The Ministry of Natural Resources and Scientific Research instructed the Central Glass and Ceramic Research Institute, Calcutta, to render technical advice and assistance to the manufacturers of porcelain bushings. The Institute approached various units producing bushings and it was informed that no complaints have been received in regard to the quality of the bushings produced by them.

4.4.2. The Development Wing has informed us that Government obtained the services of Mr. W. A. Weldon, U.N.T.A.A. expert to advise them on matters relating to the high tension insulators industry. Mr. Weldon visited all indigenous manufacturing units including the Government Porcelain Factory, Bangalore and made suggestions for improving the quality of indigenous bushings. On the completion of the expansion scheme of the porcelain factory at Bangalore, it will have a capacity of 2,500 tons per annum for electro porcelain bushings and its range of manufacture will include high tension bushings from 11 KV to 66 KV. Work has started on the project and the factory is expected to go into full production by the end of 1956.

4.5. "The prices charged by the Indian Cable Co. for D.C.C. and D.P.C. wires and strips and those charged by the National Insulated Cable Co. for D.C.C. wires are excessive and it is recommended that these two companies should be asked to reduce their prices so as to bring them in fair relation to their costs. Government should keep a watch on the prices of indigenous D.C.C. and D.P.C. copper wires and strips with a view to ensuring that they are maintained at a reasonable level."

Both the companies have informed us that they have terminated the earlier practice of linking their prices with those of the British Export Group. The changes effected in their selling prices since 1952 are discussed in the section dealing with raw materials.

4.6. "The present system of import restrictions though imposed for balance of payments reasons has been of much benefit to the transformer industry. So long as the quality of the domestic transformer continues to be satisfactory and the prices and delivery periods are reasonable, imported restrictions should be so administered as to ensure the fullest utilisation of domestic capacity."

We are informed that the above recommendations, are taken into consideration in formulating the import control policy for each licensing period.

4.7. "The transformer industry should take note of the defects pointed out by consumers, particularly the leakage of oil from tanks and inferior workmanship, and endeavour to remove the defects wherever they still exist. The manufacturers who do not have adequate arrangements for testing finished transformers and parts should make such arrangements as early as possible. The industry should continue its efforts to improve upon its delivery dates." The industry has claimed that it is making all efforts to improve the quality and dates of delivery.

4.8. "Imports of power and distribution transformers should in future be recorded separately in trade statistics by numbers and total KVA as well as by value and should be classified by voltages on the H. T. side and by ratings."

Government instructed the Collectors of Customs and the Central Excise and the Director General of Commercial Intelligence and Statistics to maintain the statistics of imports of power and distribution transformers in the manner suggested by the Commission. The statistics furnished by the Director General of Commercial Intelligence and Statistics do not, however, give the total KVA. They only give the number and value according to ratings and voltages.

4.9. "The Central and State Governments should adopt a policy of purchasing their requirements of transformers from indigenous producers as far as possible. The major electric supply undertakings should also be requested to adopt a similar policy."

The Ministry of Works, Housing and Supply has stated that in making Government purchases preference is generally given to indigenous transformers depending upon the merits of each case.

5.1. In 1953, the scope of the inquiry was restricted to power and distribution transformers upto 2,500 KVA & 37·5 KV on the H. T. side.

Scope of the inquiry.

Since then, the industry has widened its range of production to 3,000 KVA and above. The industry represented to the Commission that the scope of the present inquiry should be extended to 5,000 KVA. We examined the claim of the industry and discussed it at the public inquiry. At present, only one or two units have plans to produce transformers above 3,000 KVA. As there is a sufficiently large demand for transformers upto 3,000 KVA we are advised that it is not desirable to encourage the production of transformers above 3,000 KVA till the demand upto 3,000 KVA is satisfactorily met by the industry. Besides, as the details of the plans of the projected Government factory which is to concentrate on the production of higher ratings are yet to be settled, it would be premature to act on any assumptions regarding the field to be assigned to the private sector in this industry. We therefore conclude that the scope of the present inquiry should cover transformers upto 3,000 KVA and 37·5 KV on the H.T. side only.

5.2. The Commission in its previous report had stated that Radio and lighting transformers and instrument transformers were to be taken up for a separate examination later. As the manufacturers of these transformers have not shown any interest in obtaining protection for their products, we consider that no inquiry is necessary at the present stage.

6. In 1952 there were seven units manufacturing power and distribution transformers and their aggregate rated capacity was 370,000 KVA, single shift. Since then, the following four units have come into production, namely, The General Electric Co. of India (Mfg.) Ltd., Calcutta, The Kirloskar Electric Co. Ltd., Bangalore, The Hindusthan Electric Co. Ltd., Howrah and Bharat Bijlee Ltd., Udyognagar, Bombay. The General Electric Co. of India is a subsidiary of the General Electric Co. Ltd. of England which provides the Indian company with necessary technical assistance. The Kirloskar Electric Company has entered into an agreement with Brush Electrical Engineering Co. Ltd. of England for technical assistance and facilities for the training of its technical personnel. The Hindustan Electric Co. has secured the services of a German engineer to assist it in its expansion programmes. There is also another small unit, Gandhi Electrical Industries in Bombay. We are informed by the Development Wing in the Ministry of Commerce and Industry that four more units have been licensed, namely, Easun Engineering Co., Madras, India Electric Works, Calcutta, Kothandaraman & Co., Madras and India Transformers Ltd., Travancore. Factories of these units are under erection and they are expected to go into production shortly. The total capacity of the 16 units listed above would be 991,000 KVA working single shift.

Present position of the industry.

7.1. In 1952, the Commission did not make an estimate of the annual demand for transformers. It, however, made an attempt to estimate the aggregate demand for the First Five Year Plan period. It estimated the total additional generating capacity at the end of the plan period at

Demand.

1,344,000 KW. On the basis of the *ratio of 1 : 1·97 between generating capacity and transformer capacity upto 33 KV the requirements of transformers upto 33 KV were estimated at 2,650,000 KVA during the first plan period. This estimate did not include the demand for replacements and the additional transformer capacity then in existence required to meet the unutilised capacity as sufficient data were not available to frame a reliable estimate.

7.2.1. The Indian Electrical Manufacturers' Association, Calcutta, in its memorandum submitted to the Commission estimated the demand for 1955 at 892,000 KVA and the future annual demand at 800,000 KVA. According to the Association, the comparatively greater demand for transformers in 1955 was due to the fact that most of the power projects that were undertaken earlier were nearing completion in the final year of the First Plan period. The Central Water and Power Commission has estimated the annual demand for distribution transformers during the Second Plan period at 700,000 KVA to 900,000 KVA. The estimate of future demand prepared by the Development Wing in the Ministry of Commerce and Industry was 887,000 KVA per annum.

7.2.2. We discussed the basis of these estimates at the public inquiry. The representative of the Indian Electrical Manufacturers' Association was of the view that the ratio of transformer requirements to generation capacity should be 2:1. The representative of the Development Wing also agreed with this view. The Central Water and Power Commission, in its estimate submitted to the Commission had adopted a ratio of 1·7 : 1. During the discussions, the representative of the Central Water and Power Commission agreed that the ratio of 2:1 would be more realistic. The representative of the Madras Government, however, stated that the ratio of transformer requirement to generating capacity in Madras would be 3:1. This might be true for Madras which has an extensive system of distribution and the extent of loading in each area is small. This is not likely to hold good for some other parts of the country. For example, in the D.V.C. area in Bihar the loads are very much higher than in Madras. As our estimate of demand is for the country as a whole, we consider a ratio of 2:1 to be reasonable.

7.2.3. According to the Second Five Year Plan, the addition to generating capacity by the end of 1960 should be of the order of 3·2 million KW. This estimate includes 1·2 million KW carried over from the First Five Year Plan projects in process of completion and also the additional power capacity installed by private industry. On the basis of the ratio of transformer requirements to generating capacity at 2:1 as indicated above, the total requirements of transformer capacity during the Second Plan period would be 6·4 million KVA or on an average 1·3 million KVA a year.

Rated capacity.

8. The following statement gives the rated capacity of each of the manufacturers on single shift basis.

	KVA
1. Crompton Parkinson (Works) Ltd.	1,92,000
2. Associated Electrical Industries Mfg. Co. Ltd.	84,000

* The ratio of 1:1·97 was arrived at after a survey of the generating capacity and the transformers installations at two major power systems in the country, namely, The Tata Hydro-electrical system and the Madras Government Electricity System. This survey was conducted by Shri Rammohan of the Central Water and Power Commission in 1949.—Reference : "Transformer requirements in India" by S. Rammohan in 'Power Engineer', anuary, 1952.

		KVA
3.	National Electrical Industries Ltd.	1,30,000
4.	Government Electric Factory, Bangalore	50,000
5.	Radio Lamp Works Ltd.	30,000
6.	Radio and Electricals Ltd.	40,000
7.	Electric Construction and Equipment Co. Ltd.	24,000
8.	General Electric Co. of India Mfg., Ltd.	36,000
9.	Kirloskar Electric Co. Ltd.	75,000
10.	Hindusthan Electric Co. Ltd.	1,35,000
11.	Bharat Bijlee Ltd.	36,000
12.	Easun Engineering Co. Ltd	66,000
13.	India Electric Works	48,000
14.	Kothandaraman and Co.	30,000
15.	India Transformers Ltd.	10,000
16.	Gandhi Electrical Industries	5,000
	TOTAL	9,91,000

We understand that a few units have plans for expansion of their present capacity. We were also informed that the Ministry has appointed a special officer for a re-assessment of the capacity of each unit.

Domestic production.

9. Since 1951, the production of transformers has shown a progressive increase. In 1955, the production of three phase transformers was 6,411 in number and 558.076 KVA as against 1926 and 183,164 respectively in 1951. The bulk of the production is below 1,000 KVA. As single phase transformers are not generally used for distribution purposes in the country the manufacturers of power and distribution transformers are not producing them in any quantity. In 1955, the total production of single phase transformers was only 3,200 KVA. The following statements give the production of three phase and single phase transformers from 1952.

STATEMENT I.—Statement showing Production of three Phase Transformers

	1952		1953		1954		1955	
	Number	KVA	Number	KVA	Number	KVA	Number	KVA
1	2	3	4	5	6	7	8	9
Upto 3·3 KV:								
Upto 25 KVA	55	919	38	690	29	500	54	808
Above 25 to 75 KVA	41	2,120	49	2,635	41	2,000	45	2,509
,, 75 to 250 KVA	45	7,285	40	6,500	60	8,900	70	11,780
,, 250 to 500 KVA	9	3,450	30	10,950	7	2,400	11	4,725
,, 500 to 1,000 KVA	6	5,250	10	7,750	4	2,550	2	1,200
,, 1,000 to 1,500 KVA	...	...	...	...	...	...	2	2,300
,, 1,500 KVA	...	...	...	...	...	...	...	...
TOTAL	156	18,024	167	28,525	141	16,350	184	23,322
Above 3·3 to 6·6 KV:								
Upto 25 KVA	103	1,412	194	2,908	350	6,485	247	3,335
Above 25 to 75 KVA	68	3,925	44	2,300	147	7,775	44	2,385
,, 75 to 250 KVA	80	12,125	124	19,200	110	18,800	147	22,630
,, 250 to 500 KVA	48	18,300	52	21,200	68	29,275	58	26,050
,, 500 to 1,000 KVA	11	9,600	18	12,600	13	10,450	21	16,150
,, 1,000 to 1,500 KVA	1	1,500	2	2,750	5	6,100	...	...
,, 1,500 KVA	...	...	...	...	...	...	1	3,000
TOTAL	306	46,862	434	60,958	693	78,885	518	73,750

Above 6·6 to 11 KV:								
Upto 25 KVA	731	12,930	882	15,925	1,111	22,082	1,781	32,603
Above 25 to 75 KVA	322	16,089	265	14,067	832	45,261	1,788	94,500
,, 75 to 250 KVA	314	49,125	345	45,900	648	84,475	1,084	1,37,290
,, 250 to 500 KVA	74	28,900	98	40,280	113	46,945	148	62,380
,, 500 to 1,000 KVA	7	4,968	33	27,034	17	12,367	63	50,051
,, 1,000 to 1,500 KVA	3	3,750	3	4,500	6	8,750	11	15,350
,, 1,500 KVA	...	...	...	...	...	...	...	...
TOTAL	1,501	1,16,062	1,626	1,57,106	2,727	2,20,080	4,875	3,90,174
TOTAL UP TO 11 KV	1,963	1,81,948	2,227	2,46,589	3,561	3,13,315	5,577	4,87,246
Above 11 to 22 KV:								
Upto 25 KVA	15	200	45	485	284	4,715	506	5,920
Above 25 to 75 KVA	66	3,350	107	6,020	117	6,550	131	8,210
,, 75 to 250 KVA	51	5,925	25	3,250	13	2,400	132	16,400
,, 250 to 500 KVA	10	3,800	11	4,900	7	2,900	12	6,000
,, 500 to 1,000 KVA	1	750	7	6,200	6	5,300	13	9,200
,, 1,000 to 1,500 KVA	...	...	2	2,500	3	4,250	...	...
,, 1,500 KVA	...	...	...	...	...	...	1	2,000
TOTAL	143	14,025	197	23,355	430	26,115	795	47,730

STATEMENT I.—*contd.*

	1952		1953		1954		1955	
	Number	KVA	Number	KVA	Number	KVA	Number	KVA
1	2	3	4	5	6	7	8	9
Above 22 to 33 KV:								
Above 25 to 75 KVA	...	...	...	...	...	...	6	400
„ 75 to 250 KVA	3	300	2	300	2	500	7	1,300
„ 250 to 500 KVA	2	1,000	5	2,100	9	3,500	15	6,900
„ 500 to 1,000 KVA	2	2,000	1	1,000	7	6,500	6	6,000
„ 1,000 to 1,500 KVA	...	...	...	...	14	21,000	2	3,000
„ 1,500 to 2,000 KVA	...	...	2	4,000	1	2,000	3	5,500
„ 2,000 to 3,000 KVA	...	...	...	...	2	6,000	...	...
TOTAL	7	3,300	10	7,400	35	39,500	39	23,100
GRAND TOTAL	2113	1,99,273	2,434	2,77,344	4,026	3,80,930	6,411	5,58,076

STATEMENT II.—Statement showing Production of Single Phase Transformers.

	1952		1953		1954		1955	
	Number	KVA	Number	KVA	Number	KVA	Number	KVA
1	2	3	4	5	6	7	8	9
Upto 3·3 *KV:*								
Upto 25 KVA	67	460	116	503	38	335	79	485
Above 25 to 75 KVA	5	195	9	185	2	80	16	190
,, 75 to 250 KVA	9	1,200	10	850	...	...	9	11,020
,, 500 to 1,000 KVA	...	...	...	...	4	2,800	2	1,000
TOTAL	81	1,855	135	1,538	44	3,215	106	2,695
Above 3·3 to 6·6. *KV:*								
Upto 25 KVA	816	8,346	433	4,203	24	90	...	...
Above 25 to 75 KVA	148	1,600	75	3,800	24	1,050	3	75
TOTAL	964	9,946	508	8,003	48	1,140	3	75
Above 6·6 *to* 11 *KV:*								
Upto 25 KVA	16	85	99	755	18	102	35	230
Above 25 to 75 KVA	...	...	...	...	1	75	4	200
,, 75 to 250 KVA	...	...	...	...	4	600	...	...
TOTAL	16	85	99	755	23	777	39	430
TOTAL UPTO 11 KVA	1,061	11,886	742	10,296	115	5,132	148	3,200
Above 11 *to* 22 *KV:*								
Upto 25 KVA	369	2,128	569	3,800	65	605	...	...
Above 25 to 75 KVA	43	1,073	143	2,354	11	450	...	...
TOTAL	412	3,201	712	6,154	76	1,055	...	...
GRAND TOTAL	1,473	15,087	1,454	16,450	191	6,187	148	3,200

Raw materials.

10.1. The following is the list of the principal raw materials required for the manufacture of transformers:

(i) High silicon, low watt-loss steel sheets, generally known as stalloy, special stalloy and extra special stalloy

(ii) Cables and wires

(iii) Iron and steel

(iv) Non-ferrous metal castings, rods, tubes, etc.

(v) Insulating materials

(vi) M. S. bolts, nuts, screws, washers, etc.

(vii) Paints and varnishes

(viii) Longite or bonded cork sheets

(ix) Transformer oil

(x) Special components—

Cable boxes, terminal components, off load tapping switches, silica gel breathers, dial thermometers, oil level gauges, etc.

10.2.1. The transformer industry would require 4,000 to 4,500 tons of stalloy sheets a year. The demand is steadily increasing. The Tata Iron & Steel Co. Ltd. is the only producer of stalloy sheets in the country. Its capacity, however, is only 900 tons. This estimate of capacity is liable to vary because silicon steel sheets are produced on the same equipment as is employed for rolling mild steel sheets. The practice of rolling M. S. sheets and silicon steel sheets in the same mill carries with it certain disadvantages. As the production of silicon steel sheets has to be carried out under a pre-determined set of controlled conditions of the furnaces and the mill, it is difficult to maintain quality, when production is intermittent. In spite of this basic handicap, the company is trying its best to maintain quality. It is not, however, in a position to meet the full requirements of the country, nor can it supply high grade stalloy sheets. The representative of the Tata Company informed the Commission that its plans for the expansion of the silicon steel sheets are not yet finalised and in any case it would not be possible for the company to make improvements in the quality and supply of stalloy sheets before the end of 1958. We recommend that Government should examine this question early and if the Tata Company has difficulties in expanding its capacity, steps should be taken to establish alternative sources of supply.

10.2.2. The Sankey Electrical Stampings Ltd., the principal producer of laminations in the country has contracted to import from Europe 6,000 tons of stalloy sheets during the year. Of these, 3,000 tons would be high grade over 92%.

10.2.3. The cost of laminations in the total cost of a transformer varies between 21 to 26 per cent. The prices of indigenous stalloy sheets have increased by 19 per cent. over those of 1952. The prices of imported stalloy sheets have also increased by 12 to 24 per cent.

according to grade. There has not, however, been a corresponding increase in the prices of laminations. The selling prices of Sankey's laminations produced from indigenous sheets are given below :

	1952	Current prices
	Rs. a. p.	Rs. a. p.
Stalloy ·014	1 0 0	1 0 9
Special stalloy ·014	1 0 6	1 1 0
Extra special stalloy ·014	1 1 0	1 1 6

The current prices show an increase of 5 per cent. only in the case of stalloy sheets and 3 per cent. in the case of special stalloy and extra special stalloy sheets over the prices prevailing in 1952. It appears that the increase in the cost of sheets has been largely counterbalanced by the economies which have resulted from increase in the demand for laminations. The average price of laminations from imported stalloy sheets is Rs. 1-4-6.

10.2.4. Though Sankey's prices of laminations seem to be reasonable, we are not satisfied with the system of rebates allowed by the company to different manufacturers. In allowing rebates, various factors are taken into consideration, with the result that the rates of rebate vary from manufacturer to manufacturer for the same quantity supplied. The rebates actually allowed also work to the disadvantage of small producers of transformers. Whatever reasons the company had in the past to adopt different rates of rebates to different manufacturers, we do not think that it is desirable to continue that practice any longer. We, therefore, recommend that the company should review its present system of rebates and adopt uniform rates of rebates to all manufacturers taking into consideration only two factors, *viz.*, the quantity purchased and the delivery period required. The new rates should be made known to all the manufacturers of transformers.

10.3.1 *Copper wires and strips.*—The Indian Cable Co. Ltd. and the National Insulated Co. Ltd. are the two principal producers of copper wires and strips. In 1952 the Commission found that the two companies were charging excessive prices for copper wires and strips. Before the Commission's recommendations were made known to the public, however, the companies made substantial reductions in their prices in June, 1953. The new prices were more or less in line with those considered by the Commission as fair. Till then, the Companies' prices were fixed not on the basis of their actual costs, but on the basis of the prices quoted by the Export Group, London. Since June, 1953, both the companies have ceased to link their prices to the prices of the Export Group.

10.3.2. The companies have informed the Commission that after the reduction of prices in June 1953, revision of prices has been undertaken only to allow for variations in copper prices. The formula adopted for the revision of prices of D.C.C. and D.P.C, wires and D.P.C. strips was that 'for every £ 1 variation in the price of copper the increase in rupee cost is Rs. 13-5-4 plus 12½ per cent. or Rs. 15

per ton, which works out to 1·285 pies per lb. The 12½ per cent. addition is to cover the 10 per cent. discount allowed to the transformer industry and extra financial charges'. The copper content in the winding wires is taken as follows:

	Copper content	
	D.C.S. Wires	D.P.C. Wires
	Per cent.	Per cent.
6 to 15 SWG	98	98
16 to 22 SWG	93	91
23 to 30 SWG	85	82

All strips, D.C.C. or D.P.C. contain about 96 to 98 per cent. copper. The evidence before us does not indicate that the prices charged by the two companies are excessive in relation to cost as in 1952. It is a noteworthy fact, however, that the prices at which these wires and strips are available in U. K. to British producers are substantially less than what the two Indian companies charge to domestic producers here. One of the reasons advanced for the higher cost in India is the small size of the plant here, and secondly, the inability to put to full use the capacity of the existing plants. We are also informed that a few small-scale producers are offering these wires 20 per cent. cheaper than the two established units, though their quality is not of uniform standard. In view of the large potential demand for D.P.C. wires in the country, we recommend that the manufacturers should try to lower the prices of D.P.C. wires and strips so as to encourage greater offtake of the standard product.

10.4. *Steel plates and sections.*—The distribution and prices of steel plates and sections are controlled by Government. We received complaints from manufacturers that they were not getting adequate quantity of steel plates and sections and deliveries were also very often delayed. The Indian Electrical Manufacturers' Association should examine the difficulties of the individual manufacturers and approach the Development Wing and the Iron & Steel Controller with concrete suggestions to remedy the present difficulties. No such attempt has been made so far.

10.5. *Insulating material.*—Insulating materials continue to be imported as before. We are informed that there is one factory in Hyderabad which has started producing small quantities of insulating material.

10.6. *Bushings.*—The porcelain factories of this country continue to offer adequate supplies of low tension bushings. H. T. bushings continue to be imported entirely from outside. It is expected, however, that the Mysore Government Porcelain factory will go into full operation by the end of 1956 and supply 2,500 tons of H. T. bushings thereafter. This supply should meet fully the requirements of the transformer industry.

10.7. *Cooling tubes.*—The only source of seem welded tubes of domestic production is the Premier Automobiles Ltd., Bombay. It was represented to us that no large scale production was undertaken till now because of diffidence about the quality. We are now informed by the Premier Automobiles that they are satisfied about the technical improvements undertaken and are now in a position to supply the requirements of the transformer industry. The capacity of Premier Automobiles for such tubes was reported to us to be 2 to 3 million feet per year, while the requirements of the transformer industry do not exceed half a million. If the quality of these tubes is satisfactory, the use of this domestic product should present the industry no difficulties.

10.8. On the recommendation of the Commission in 1952, the transformer oil imported with transformers is assessed at the same rate of duty as applicable to transformer oil imported separately. We recommend that the same practice should continue.

10.9. The following statement shows the proportions of imported and locally purchased materials to the total ex-works costs of production of two types of transformers by a representative unit in 1952 and 1955.

	50 KVA		100 KVA	
	1952	1955	1952	1955
	Per cent.	Per cent.	Per cent.	Per cent.
1. Imported materials . . .	39·93	41·23	38·99	42·27
2. Locally purchased materials . .	27·18	20·20	24·15	21·36
3. Total of 1 and 2	67·11	61·43	63·14	63·63
4. Total ex-works cost . . .	100·00	100·00	100·00	100·00

It will be seen from the above statement that the cost of material constitutes more than 60 per cent. and the imported material constitutes about 40 per cent. of the total cost of a transformer. Though the transformer industry is established in the country, the industry's dependence on imported material continues to be more or less the same as in 1952. It is more than probable, however, that there is reluctance on the part of indigenous manufacturers generally to take any risk by expanding raipdly the use of domestic products, lest their quality be affected. This is not a very satisfactory position. There is an obligation on the part of the manufacturers of transformers, which is a protected industry, to encourage the development of ancillary industries within the country by rendering them necessary technical assistance whenever necessary. There is also a corresponding obligation on the part of ancillary industries to maintain reasonable standards of quality and to ensure supplies in time at reasonable prices. As it is essential to develop the ancillary industries speedily, we do not consider it desirable to reduce the duty on raw materials. On the other hand, we recommend that Government should investigate the capacity of various ancillary industries and encourage the setting up of new units if necessary. In cases where

ancillary industries require technical assistance, Government should try to provide such assistance. The Development Wing should also provide a better liaison between the manufacturers of transformers and the ancillary products thereof.

Quality.

11.1. The Commission in its previous Report had drawn the attention of the industry to certain defects in the quality of domestic transformers particularly in respect of leakage of oil from the tanks and inferior workmanship. Most of the manufacturers have now informed us that special care is taken to produce transformers of good quality and inspection is introduced at each stage of production. The opinion amongst consumers is that although it is too early to make detailed comparison with the foreign makes of transformers, the transformers made by well-established manufacturers in the country are generally satisfactory in performance and comply with the required specifications and acceptance tests. They have, however, pointed out that some minor defects like oil leakage continue to persist for want of proper attention.

11.2. An important and vital issue which came very forcefully to our attention at every stage of this inquiry was the question of standardisation. Every State Government and private electricity undertakings have their own specifications for transformers. Most of those specifications were drawn up quite a long time ago and perhaps conservatism and force of habit seem to prevent indentors from accepting justifiable modifications to already prescribed specifications. There was not much harm or disadvantage when requirements were limited and were met from imports. But conditions have changed today. With the development of various hydro-electric projects in the country, the demand for transformers has become massive. Power and distribution transformers are, however, manufactured according to order only. As specifications vary from consumer to consumer, manufacturers are unable to maintain adequate stock of specialised raw materials like laminations. Nor can the manufacturers of ancillary products plan their production in advance. Delay in the execution of orders about which the Commission received many loud complaints and wastage of valuable materials indicated by the disparities in the consumption of materials during our cost analysis are in these circumstances unavoidable. On inquiries made by us, three of the leading manufacturers furnished us quotations for a 100 KVA transformer according to the proposed Indian Standards and according to the specifications prescribed by three State Governments. These quotations are given below :

Specification	Price per transformer		
	Firm A	Firm B	Firm C
	Rs.	Rs.	Rs.
Proposed Indian Standard specification . . .	5,050	5,576	5,300
Madras Government Electricity Department . .	5,350	6,172	5,740
Andhra Government	5,600	5,869	5,500
Punjab P. W. D. Electricity Department . .	5,700	6,319	5,850

It will be seen from the above statement that in the case of all the three States the cost could be brought down if the proposed Indian standards are accepted. Further, the maintenance cost also will be lower if transformers according to standard specifications are used. We are informed that the proposed standard specifications upto 100 KVA are now under circulation. It is expected that those standards could be finalised by August 1956. In view of the urgent need for the standardisation of transformers, we recommend that the Indian Standards Institution should give high priority to the finalisation of the proposed standards. We also recommend that when the standards are finalised, the Central Water and Power Commission and the Development Wing in the Ministry of Commerce and Industry should prevail upon the State Governments and private electricity undertakings to order their requirements of transformers according to the standards prescribed by the Indian Standards Institution.

Period of delivery.

12. The consumers have expressed great dissatisfaction about the delays in delivery. According to them the domestic manufacturers quote long delivery periods and even those delivery periods are not always kept. One State Government submitted to the Commission the following statement showing the delivery position in regard to the orders placed on various manufacturers.

Delivery position as on 31-12-1955.

	Qty. ordered	Qty. that should have been delivered by 31-12-55	Qty. actually supplied by 31-12-55	Shortfall as on 31-12-55	Qty. due to be delivered before 31-3-56	Total
1	2	3	4	5	6	
A Firm . . .	353	252	179	73	[illegible]	
B Firm . . .	145	110	40	70	[illegible]	
C Firm . . .	157	58	77	(−19)	[illegible]	
D Firm . . .	352	217	219	(−2)	[illegible]	
E Firm . . .	544	260	174	86	[illegible]	
F Firm . . .	155	108	69	39	[illegible]	
G Firm . . .	859	642	278	364	[illegible]	
H Firm . . .	76	76	76	..		
TOTAL .	2,641	1,723	1,112	611	[illegible]	

There are various reasons for the delay in delivery. Firstly, most of the manufacturers, particularly the smaller ones, are under capitalised and they cannot afford to carry sufficient stocks of raw materials till orders are actually received. Secondly, the planning of orders in the case of a few States is not even and sudden bunches of demand are created at particular times. Thirdly, the manufacturers are severely handicapped if there is delay in the final payment of

bills by Central and State Governments on quantities actually delivered. As domestic manufacturers have sufficient capacity to meet domestic demand upto 3,000 KVA and 37·5 KV on the H.T. side, delays in delivery should be avoidable at least to an appreciable extent, if the State Governments accept the proposed Indian standards when placing orders and order their requirements at least one year in advance. This will give the Central Government also sufficient time to decide whether the domestic manufacturers could meet the requirement of any particular State in reasonable time and licence imports accordingly. Further, we recommend that Government departments should not normally delay payment beyond six months after the delivery is completed. We consider this as important as raw materials alone contribute such a large fraction of the total costs of the product.

Imports and import control policy.

13.1.1. *Imports.*—Imports of transformers of all kinds into India since 1951-52 were as follows :

Year	Value of Imports Rs. (In thousands)
1951-52	1,44,55
1952-53	1,49,47
1953-54	1,97,50
1954-55	1,61,69

The above statement would indicate that the value of imports increased since protection has been granted to the industry. But we are told that the bulk of the imports has been in ranges above 2,500 KVA.

13.1.2. We reiterate the recommendations made by the Commission in 1952 that imports of power and distribution transformers should, in future, be recorded separately in trade statistics by numbers and the total KVA as well as by value and that such imports should be classified by voltages on the H.T. side as (i) upto 3·3 KV, (ii) above 3·3 to 6·6 KV, (iii) 6·6 to 11 KV, (iv) 22 KV, (v) 33 KV to 37·5 KV, & (vi) above 37·5 KV. Imports under each of these categories should be further sub-classified by ratings as follows :

(i) Upto 25 KVA, (ii) above 25 to 75 KVA, (iii) above 75 to 250 KVA, (iv) above 250 to 500 KVA, (v) above 500 to 1,000 KVA, (vi) above 1,000 to 1,500 KVA, (vii) above 1,500 to 3,000 KVA, and (viii) above 3,000 KVA.

13.2. *Import control policy.*—Imports of transformers are licensed under S. No. 42 of Part II of I.T.C. Schedule. The licensing policy for the different periods since 1st January, 1953 is indicated below :

January-June, 1953.—During January-June, 1953, soft currency licences for transformers upto 1,000 KVA and 22 KV on the H. T. side were granted to established importers to the extent of 25% of one-half of their best year's imports of transformers of this category only. In the case of other types of transformers soft currency licences were granted to the extent of 100 per cent of one-half of their best year's imports.

July-December, 1953 . . . . . } Policy same as above.
January-June, 1954 . . . . . }
July-December, 1954 . . . . . }

January-June, 1955.—Transformers upto 1,500 KVA and 22 KV on the H. T. side were allowed to be imported by established importers from soft currency areas to the extent of 25 per cent. of one-half of their best year's imports. No licences were granted to actual users for this category of transformers. In the case of other types of transformers licences were granted to established importers to the extent of 100% of half of best year's imports with the stipulation that not more than 33 1/3 per cent. of the face value of licences granted under this item could be utilised for the import of transformers of ratings above 1,500 KVA and upto 3,000 KVA and 33 KV—37·5 KV on the H. T. side. Further 50 per cent. of the face value of licences granted under this item could be utilised for imports from dollar area. Actual users and new comers were also eligible to apply for licences. The maximum value of licence for which a new comer could obtain licence was fixed at Rs. 10,000.

July-December, 1955.—The policy for this period was the same as the preceding period (*i.e.*, January-June, 1955) except that licences were also issued on an *ad hoc* basis to State Electricity Undertakings and Multi-Purpose Project Authorities.

January-June, 1956.—The licensing policy remains the same as that followed in the preceding period.

Existing rate of duty.

14. Power and distribution transformers upto 2,500 KVA and 37·5 KV are assessed to duty under item 72(39) of the First Schedule of the Indian Customs Tariff (Fortieth issue) the relevant extract from which 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 U. K.	A British Colony	Burma	
1	2	3	4	5	6	7	8
*72(39)	Power and Distribution transformers up to 2,500 KVA and 37·5 KV on the H. T. side (Primary voltage being over 250) excluding furnace, rectifier and flame-proof transformers.	Protective.	10 per cent. *ad valorem* plus one-fourth of the total duty.	..	..	..	†December, 31st, 1955.

* Protection was extended to 31-12-1956 by the Indian Tariff (Third Amendment) Act, 1955.

† (1) Under Government of India Ministry of Finance (Revenue Division) Notification No. 13-Customs, dated the 28th February, 1953, as subsequently amended by Notification No. 99-Customs dated the 26th December, 1953, No. 10-Customs, dated the 15th January 1954, and No, 25-Customs, dated the 27th February, 1954, articles specified in column 1 of the Schedule noted below are exempt from the payment of so much of the additional duty of

Customs leviable thereon under any law for the time being in force as is in addition to the duty of Customs leviable thereon under the First Schedule to Indian Tariff Act, 1934, or under the said Schedule read with any Notification of the Government of India for the time being in force :—

SCHEDULE

Name of article	Extent of Exemption
Power and Distribution Transformers upto 2,500 KVA and 37·5 KV on the H. T. side (primary voltage being over 250) excluding furnace rectifier and flames-proof transformers.	So much as is in excess of 5 per cent. of the amount of duty leviable thereon under the Indian Tariff Act, 1934, read with any notification of the Central Government for the time being in force.

(2) Under Government of India, Ministry of Finance (Revenue Devision), Notification No. 113-Customs, dated the 16th July, 1955, Porcelain bushings which are component parts of transformers falling under this Item are exempt from the payment of so much of the Customs duty leviable thereon under the First Schedule of Indian Tariff Act, 1934, as is in excess of 5 1/4 per cent *ad valorem*, and also from the additional duty of Customs leviable thereon under any law for the time being in force.

Commission's estimate of fair ex-works prices of transformers.

15.1. We obtained the actual costs for the past and the estimates for the future from various manufacturers. Our Cost Accounts Officer examined in detail the costs of two of the units, namely, the National Electrical Industries Ltd., Bombay and the Kirloskar Electric Co. Ltd., Bangalore. The National Electrical Industries started production in 1949 and at present it produces power and distribution transformers of various ratings and voltages. The Kirloskar Electric Co. started the production of transformers only in July, 1954. After examining the details of costs of the above two companies and the data furnished by others, we prepared the fair ex-works prices of 25 KVA, 50 KVA, 100 KVA, 250 KVA, 500 KVA with voltage range 11 KV/440 and 1,500 KVA with voltage range of 33 KV/11 KV. Our estimates of fair ex-works prices are given below :—

	25 KVA	50 KVA	100 KVA	250 KVA	500 KVA	1500 KVA
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Net material cost .	1,461·1	2,003·0	2,992·3	5,617·9	8,873·8	21,738·2
Conversion cost . .	893·9	971·1	1,330·2	2,068·1	2,803·2	7,566·1
Packing material .	55·5	85·2	91·6	189·0	216·3	468·9
Interest on working capital . . .	35·2	44·8	64·7	115·7	175·1	437·7
Return on block .	96·6	122·6	175·8	311·5	468·8	1,196·3
Fair ex-works price (future) . .	2,542·3	3,226·7	4,654·6	8,302·2	12,537·2	31,407·2
Fair ex-works price (1952-53) . .	2,229·0	2,870·0	3,938·0	7,258·0	10,513·0	..

The increase in our estimates of costs as compared with 1952-53 costs is mainly due to two factors, namely, the increase in the prices of materials like steel and copper, and, the increases in wages and salaries. These two factors are beyond the control of the industry, but otherwise the costs are under control. We have allowed the usual $4\frac{1}{2}$ per cent. interest on working capital calculated on the basis of 4 months cost of production and the return on block is allowed at 10 per cent.

C.i.f. prices and landed costs.

16. The statement in Appendix III gives the data supplied by Transformer (XTA) Agreement, representing the leading importers of British transformers and by the Collectors of Customs. At the public inquiry it was brought to our notice that Continental transformers are cheaper by 25 to 30 per cent. than Indian and British transformers and that their delivery period also is more attractive. The representative of the Madras Government furnished us the quotations received by his Government from Continental manufacturers on a tender opened on 31-12-1955. Those quotations were f.o.r. Madras. The following statement gives the c.i.f. prices of Continental makes obtained after deducting clearing charges and duty from the f.o.r. quotations and the c.i.f. values furnished by Transformer (XTA) Agreement.

		C.i.f. in Rs.	
		11 KV/400 Volts	
		50 KVA	100 KVA
WEST GERMANY	Firm No. 1	2,985	3,891
	Firm No. 2	2,487	..
NORWAY		2,415	3,330
BELGIUM	Firm No. 1	2,953	4,059
	Firm No. 2	2,252	3,041
EAST GERMANY		2,406	3,111
UNITED KINGDOM		3,383	4,679

Comparison of landed costs of imported transformers and fair ex-works prices of domestic transformers.

17. To determine the quantum of protection we decided to take two sizes of distribution transformers for comparison of domestic costs with c.i.f. price which should give a fair idea of the duty required to protect the domestic industry. The two sizes selected are 11 KV/400 volts—50 KVA and 100 KVA. The following statement gives the comparison of the c.i.f. and landed cost of imported transformers and the fair ex-works prices of domestic transformers.

Statement showing the comparison of the c.i.f. and landed costs of imported transformers with the fair ex-works prices of domestic transformers.

C. i. f. price	Duty at the ate of 110/12 per cent.	Clearing charges	Landed cost ex-duty	Fair ex-works price	Difference between fair selling price and landed cost without duty	Difference as a percentage c.i.f.
1	2	3	4	5	6	7
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
			50 KVA 11 KVA/400			
2984·6 (West Germany)	313·4	72	3056·6	3226·7	170·1	5·70
2486·9 (West Germany)	261·1	72	2558·9	3226·7	667·8	26·85
2414·5 (Norway) .	253·5	72	2486·5	3226·7	740·2	30·66
2952·9 (Belgium) .	310·1	72	3024·9	3226·7	201·8	6·83
2406·3 (East Germany)	252·7	72	2478·3	3226·7	748·4	31·10
2251·6 (Belgium) .	236·4	72	2323·6	3226·7	903·1	40·11
3383·0 (U.K.) .	355·2	72	3455·0	3226·7	(—)228·3	(—)6·75
			100 KVA			
3891·4 (West Germany)	408·6	100	3991·4	4654·6	663·2	17·04
3330·3 (Norway) .	349·7	100	3430·3	4654·6	1224·3	36·76
4058·8 (Belgium) .	426·2	100	4158·8	4654·6	495·8	12·22
3111·3 (East Germany)	326·7	100	3211·3	4654·6	1443·3	46·39
3040·7 (Belgium) .	319·3	100	3140·7	4654·6	1513·9	49·79
4679·0 (U.K.) .	491·3	100	4779·0	4654·6	(—)124·4	(—)2·66

The above figures must be used with caution. In the case of 50 KVA and 100 KVA transformers of Belgium make the duty indicated is as high as 40 per cent. and 50 per cent. respectively. The duty indicated in the case of some other Continental makes also is fairly high, while no duty is indicated on British transformers. On an examination of the Continental quotations received by us, we find that none of them satisfies the prescribed specifications. The main reason for the difference in the domestic cost and the Continental cost is due to significant differences in design. If the Indian manufacturers are allowed to adopt the same design as that adopted by the Continental manufacturers, the Indian costs also will fall substantially. But the evidence before us is not conclusive to prove that Continental makes are generally acceptable to consumers. If the consumers are today attracted to Continental makes, it is more due to difficulties in obtaining Indian and British makes and not the price differential as such. Till recently at least our most important and steady source of supply has been the United Kingdom while Germany, Italy and Belgium show significant imports in a particular month here or there. Further, when the Indian Standards are laid down, the Continental makes will also have to conform to those standards and their present advantage in design will tend to disappear. Secondly, the quotations for bulk

contracts are not always a true indication of cost; because an initial small loss can be made up through the higher cost of spare parts. It would, therefore, not be correct to accept the Continental quotations without material reservations, and, hence we are unable to adopt these as the basis for comparison.

Continuance of protection.

18. We, therefore, recommend that the present duty of 10% *ad valorem* without surcharge be continued upto 31st December, 1960. The duty should be made applicable to power & distribution transformers upto 3,000 KVA and 37·5 KV on the H. T. side. We further recommend that as long as the quality of domestic transformers continues to be satisfactory and prices and delivery periods are reasonable, import restrictions should be so administered as to ensure the fullest utilization of domestic capacity.

Changes in the Indian Customs Tariff.

19. If the recommendation in paragraph 18 is accepted it will be necessary to amend tariff item No. 72(39) in the First Schedule to the Indian Customs Tariff to read as follows :—

Item No.	Name of the article	Nature of duty	Standard rate of duty	Duration of protective duty
1	2	3	4	5
*72 (39)	Power and distribution transformers upto 3,000 KVA and 37·5 KV on the H. T. side (primary voltage being over 250) excluding furnace, rectifier and flame-proof transformers.	Protective.	10 per cent. *ad valorem* plus one-fourth of the total duty.	December 31st, 1960.

*(1) Under Government of India, Ministry of Finance (Revenue Division), Notification No. 13-Customs, dated the 28th February, 1953, as subsequently amended by Notification No. 99-Customs, dated the 26th December, 1953, No. 10-Customs, dated the 15th January, 1954, and No. 25-Customs, dated the 27th February, 1954, articles specified in column 1 of the Schedule noted below are exempt from the payment of so much of the additional duty of Customs leviable thereon under any law for the time being in force as is in addition to the duty of Customs leviable thereon under the First Schedule to Indian Tariff Act, 1934, or under the said Schedule read with any notification of the Government of India for the time being in force :—

SCHEDULE

Name of article	Extent of exemption
Power and distribution transformers upto 3,000 KVA and 37·5 KV on the H. T. side (primary voltage being over 250) excluding furnace, rectifier and flame-proof transformers.	So much as is in excess of 5 per cent. of the amount of duty leviable thereon under the Indian Tariff Act, 1934 read with any notification of the Central Government for the timebeing in force.

(2) Under Government of India, Ministry of Finance (Revenue Division), Notification No. 113-Customs, dated the 16th July, 1955, Porcelain bushings which are component parts of transformers falling under this Item are exempt from the payment of so much of the Customs duty leviable thereon under the First Schedule of Indian Tariff Act, 1934, as is in excess of 5 1/4 per cent *ad valorem*, and also from the additional dutyof Customs leviable thereo under any law for the time being in force.

Summary of conclusions and recommendations.

20. Our conclusions and recommendations are summarised below :—

(i) The scope of the present inquiry covers transformers upto 3,000 KVA and 37·5 KV on the H. T. side.

[Paragraph 5.1.]

(ii) The total capacity of 16 units in the industry (including the four units which have been licensed and which are expected to go into production shortly) would be 991,000 KVA working single shift.

[Paragraphs 6 & 8.]

(iii) The total requirements of transformer capacity during the Second Plan period would be 6·4 million KVA or on an average 1:3 million KVA a year.

[Paragraph 7.2.3.]

(iv) Since 1951, the production of transformers has shown a progressive increase. In 1955, the production of three phase transformers was 6,411 in number and 558,076 KVA as against 1926 and 183,164 respectively in 1951.

[Paragraph 9.]

(v) Government should examine early the supply position of silicon steel sheets, and if the Tata Iron and Steel Company has difficulties in expanding its capacity, steps should be taken to establish alternative source of supply.

[Paragraph 10.2.1.]

(vi) The Sankey Electrical Stampings Ltd., should review its present system of rebates and adopt uniform rates of rebates to all manufacturers, taking into consideration only two factors, *viz.*, the quantity purchased and the delivery period required. The new rates should be made known to all the manufacturers of transformers.

[Paragraph 10.2.4.]

(vii) In view of the large potential demand for D.P.C. wires in the country, the Indian Cable Co. Ltd., and the National Insulated Cable Co. Ltd. should try to lower the prices of D.P.C. wires and strips so as to encourage greater off-take of the standard product.

[Paragraph 10.3.2.]

(viii) The Indian Electrical Manufacturers' Association should examine the difficulties of individual manufacturers of transformers in getting adequate quantity of steel plates and sections and approach the Development Wing and the Iron & Steel Controller with concrete suggestions to remedy the present difficulties.

[Paragraph 10.4.]

(ix) The present practice of assessing the transformer oil imported with transformers at the same rate of duty as applicable to transformer oil imported separately should be continued.

[Paragraph 10.8.]

(x) As it is essential to develop the ancillary industries speedily, it is not considered desirable to reduce the duty on raw materials. On the other hand Government should investigate the capacity of

various ancillary industries and encourage the setting up of new units if necessary. In cases where ancillary industries require technical assistance, Government should try to provide such assistance. The Development Wing should also provide a better liaison between the manufacturers of transformers and ancillary products thereof.

[Paragraph 10.9.]

(xi) The opinion amongst consumers is that although it is too early to make detailed comparison with the foreign makes of transformers, the transformers made by well-established manufacturers in the country are generally satisfactory in performance and comply with the required specifications and acceptance tests.

[Paragraph 11.1.]

(xii) In view of the urgent need for the standardisation of transformers; the Indian Standards Institution should give high priority to the finalisation of the proposed standards. It is also recommended that when the standards are finalised the Central Water and Power Commission and the Development Wing in the Ministry of Commerce and Industry should prevail upon the State Governments and private electricity undertakings to order their requirements of transformers according to the standards prescribed by the Indian Standards Institution.

[Paragraph 12.]

(xiii) The reasons for the delay in delivery of transformers by domestic manufacturers are given in paragraph 12. As domestic manufacturers have sufficient capacity to meet domestic demand upto 3,000 KVA and 37·5 KV on the H.T. side, delays in delivery should be avoidable to appreciable extent, if the State Governments accept the proposed Indian Standards when placing orders and order their requirements at least one year in advance. This will give the Central Government also sufficient time to decide whether the domestic manufacturers could meet the requirements of any particular State in reasonable time and licence imports accordingly. It is further recommended that Government Departments should not normally delay payment beyond six months after the delivery is completed. This is important as raw materials alone constitute a large fraction of the total costs of transformers.

[Paragraph 12.]

(xiv) It is reiterated that as recommended by the Commission in its 1952 Report, imports of power and distribution transformers should, in future, be recorded separately in Trade Statistics by numbers and the total KVA as well as by value and that such imports should be classified by voltages on the H.T. side and also by ratings as per details given in paragraph 13.1.1.

[Paragraph 13.1.1.]

(xv) The Commission's estimates of fair ex-works prices of indigenous transformers are given in paragraph 15.1.

[Paragraph 15.1.]

(xvi) It is recommended that the present protective duty of 10 per cent. *ad valorem* without surcharge to be continued upto 31st December, 1960. The duty should be made applicable to power and distribution transformers upto 3,000 KVA and 37·5 KV on the H. T.

side. It is further recommended that as long as the quality of domestic transformers continues to be satisfactory and prices and delivery periods are reasonable, import restrictions should be so administered as to ensure the fullest utilisation of domestic capacity.

[Paragraph 18.]

(xvii) If the recommendation in (xvi) above is accepted, Item No. 72(39) in the First Schedule of the Indian Customs Tariff should be amended as indicated in paragraph 19.

[Paragraph 19.]

Acknowledgements.

21. We wish to thank the representatives of producers, importers and consumers and the State Governments and other Government Departments who furnished us with valuable information and gave evidence before us. Our thanks are also due to Shri V. R. Raghavan, Director, Central Water and Power Commission and Shri K. N. Ramaswamy, Deputy Development Officer, Development Wing of the Ministry of Commerce and Industry, for their assistance in connection with this inquiry.

K. R. DAMLE,
Chairman.

S. K. MURANJAN,
Member.

S. K. BOSE,
Secretary.

BOMBAY,
the 9th April, 1956.

APPENDIX I

[*vide* paragraph 3.1]

List of firms, associations and Electricity undertakings to which questionnaires were issued and from whom replies were received

* Indicates that they replied or sent memoranda.

PRODUCERS :

*1. National Electrical Industries Ltd., Industrial Estate, Lalbaug, Bombay-12.
*2. Crompton Parkinson (Works) Ltd., Haines Road, Worli, Bombay-18.
*3. Radio Lamp Works Ltd., Kamani Chambers, Ballard Estate, Bombay.
*4. Government Electric Factory, Mysore Road, Bangalore-2.
*5. Radio and Electrical Ltd., No. 2, Lattice Bridge Avenue, Madras.
*6. Electric Construction and Equipment Co. Ltd., 35, Chittaranjan Avenue, Calcutta-12.
*7. Associated Electrical Industries Mfg. Co. Ltd., 6, Mission Row, Calcutta.
*8. Kirloskar Electric Co. Ltd., Bangalore.
*9. The General Electric Co. of India (Mfg.) Ltd., 50, Taratalla Road, Garden Reach, Calcutta-24.
*10. The Hindustan Electric Company Ltd., 184, J. N. Mukherjee Road, Salkia, Howrah.
*11. Bharat Bijlee Ltd., Udyog Nagar, Bombay-19.

ASSOCIATION :

*1. Indian Electrical Manufacturers' Association, 35, Stephen House, Dalhousie Square, Calcutta-1.

CONSUMERS :

*1. The Tata Hydro Electric Power Supply Co. Ltd., Bombay House, Bruce Street, Bombay-1.
2. Killick Industries Ltd., Electricity House, Santacruz, Bombay.
*3. The Federation of Electricity, Undertakings of India, Killick Building, Home Street, Fort, Bombay.
*4. The Calcutta Electric Supply Corporation Ltd., Victoria House, Chowringhee Square, Calcutta.
*5. Electricity Supply Companies, Managing Agents, Martin Burn Ltd., 12, Mission Row, Calcutta.
6. Octavius Steel and Co., P. B. No. 38, Calcutta.
7. Andrew Yule and Co., 8, Clive Row, Calcutta.
*8. The Association of Electric Supply Cos. of U. P. and Delhi, C/o Martin Burn Ltd., 12, Mission Row, Calcutta.
9. The Assen. of Electricity Undertakings, Bengal, Victoria House, Calcutta.
*10. The Assen. of Electricity Undertakings of Bihar and Orissa, 14, Old Court House Street, Calcutta.
11. The Assen. of Electricity Undertakings of Bombay Province, Killick House, Home Street, Bombay-1.
12. South Madras Electric Supply Corporation Ltd., Tiruchirapalli.
13. The Madras Presidency Elec. Licencees Assen. Ltd., 10, Mount Road, Madras.
*14. B. E. S. T. Undertaking, Electric House, Bombay-1.
15. The Superintending Engineer, Madras Electric System, 157, Mount Road, Madras.
16. The Superintending Engineer, Mettur Electric System, Mettur.
17. Chief Electrical Engineer to the Government of Mysore, Bangalore.
*18. Chief Electrical Engineer to the Government of Travancore-Cochin, Trivandrum.

19. The Superintending Engineer, Andhra Power System, Vijayawada.
*20. Kanpur Electric Supply Administration, Government of U. P., Electric House, Kanpur.
*21. The Superintending Engineer, Hydel Ganga Circle, Roorkee.
22. The Chief Engineer, East Punjab P. W. D., Electricity Branch, Simla.
*23. Damodar Valley Corporation, Anderson House, Alipore.

IMPORTERS :

1. International Genral Electric Co. (I) Ltd., Thackersey House, Graham Road, Ballard Estate, Bombay-1.
2. British Insulated Callender's Cables Ltd., Esplanade House, Waudby Road, Bombay.
3. General Electric Co. (India) Ltd., Magnet House, Dougal Road, Ballard Estate, Bombay.
4. The English Electric Co. Ltd., P. O. Box No. 752, Bombay.
5. Ahmedabad Mfg. and Calico Printing Co. Ltd., Post Box No. 12, Ahmedabad.
6. C. A. Parsons and Co. Ltd., 12, Mission Row, Calcutta.
7. A Reyzlle and Co. Ltd., 12, Mission Row, Calcutta.
8. Easun Engineering Co. Ltd., 2nd Line Beach, Madras.
9. Parry and Co. Ltd., Mount Road, Madras.
10. Binny and Co. (Madras) Ltd., Agents, English Electric Co. Ltd., 7, Armenian Street, Madras.
11. Associated Electrical Industries (India) Ltd., Crown House, 6, Mission Row, Calcutta.
*12. Indian Copper Corporation, Ghatsila.
13. Marshall Sons and Co. (India) Ltd., Post Box 124, Bombay-1.
*14. Transformer (XTA) Agreement, B-4, Clive Building, Calcutta.
15. Steam and Mining Equipment (India) Ltd., 101, Part Street, Calcutta-16.

SUPPLIERS OF RAW MATERIALS :

*1. Tata Iron and Steel Co. Ltd., Bombay House, Bruce Street, Bombay-1.
*2. Sankey Electrical Stampings Ltd., Bhandup, Bombay.
*3. National Insulated Cable Co. of India Ltd., Stephen House, 4, Dalhousie Square, Calcutta.
*4. Indian Cable Co. Ltd., 9, Hare Street, Calcutta
*5. British Insulated Callender's Cables Ltd., Waudby Road, Bombay-1.

GOVERNMENT DEPARTMENTS :

*1. Ministry of Commerce and Industry (Development Wing),Shajahan Road, New Delhi.
*2. Central Water and Power Commission (Power Wing), Bikaner House, New Delhi.

APPENDIX II

(*vide* paragraph 3.2)

List of persons who attended the public inquiry

A. PRODUCERS

1. Shri P. R. Deshpande 2. Shri V. V. Dhume	Representing	Crompton Parkinson (Works) Ltd., Haines Road, Worli, Bombay-18.
3. Mr. S. Szafranski 4. Shri W. P. Karnik	,,	National Electrical Industries Ltd., Industrial Estate, Lalbaug, Bombay-12.
5. Shri L. P. Shah 6. Shri H. L. Gulati	,,	Electric Construction and Equipment Co. Ltd., 35, Chittaranjan Avenue, Calcutta-12.
7. Shri M. L. Gauba 8. Shri P. H. Gidwani	,,	Radio Lamp Works Ltd., Victoria Road, Mazagaon, Bombay-10.
9. Shri N. W. Gurjar 10. Shri R. L. Kirloskar 11. Shri K. G. Chandrasekhar 12. Shri J. N. Gurjar	,,	Kirloskar Electric Co. Ltd., Malleswaram, Bangalore-3.
13. Shri V. Rama Rao	,,	Radio and Electricals Ltd., No. 2, Lattice Bridge Road, Adyar, Madras.
14. Shri T. G. Mahabir Singh 15. Shri A. Hanumantha Rao	,,	Government Electric Factory, Mysore Road, Bangalore-2.
16. Mr. L. F. Roberts	,,	General Electrical Co. of India (Mfg.) Ltd., 58, Taratalla Road, Garden Reach, Calcutta-24.
17. Shri P. C. Mehta 18. Shri J. R. Danani 19. Shri J. S. Zaveri	,,	Bharat Bijlee Ltd., Udyog Nagar, Bombay-22.
20. Shri S. P. Divgi	,,	Associated Electrical Industries Mfg. Co. Ltd., 6, Mission Row, Calcutta-1.
21. Shri D. K. Sinha	,,	Indian Electrical Manufacturers Association, 35, Stephen House, Dalhousie Square, Calcutta-1.
22. Shri D. D. Desai 23. Shri F. F. Cama	,,	Hindustan Elçctric Co. Ltd., 184, J. N. Mukherjee Road, Salkia, Howrah.

B. CONSUMERS :

24. Shri J. A. Colaco 25. Shri M. J. A. D'Lima 26. R. P. Aiyer	,,	The Federation of Electricity Undertakings of India, Killick Building, Home Street, Fort, Bombay.
27. Shri S. K. Matthan	,,	The B. E. S. and T. Undertaking, Electric House, Bombay.
28. Shri Balkrishan	,,	Executive Engineer, Electricity Branch, Chandigarh.
29. Shri P. A. Krishnan	,,	Superintending Engineer (Technical), Electrical, Madras.

C. IMPORTERS :

30.	Mr. J. E. W. Grainge	Representing	Transformer. (XTA) Agreement, B-4, Clive Building, Calcutta.
31.	Mr. C. W. Amos		

D. SUPPLIERS OF RAW MATERIALS :

32.	Mr. K. C. Maitra	„	Sankey Electrical Stampings Ltd., Bhandup, Bombay.
33.	Mr. G. R. Thompson		
34.	Shri V. S. Deshpande		
35.	Shri N. R. Banerjee		
36.	Shri K. J. Claetus	„	Tata Iron and Steel Co. Ltd., Bombay House, Bruce St., Bombay.
37.	Shri S. S. Vaze		
38.	Shri K. F. Mogul		
39.	Mr. A. R. Driessen	„	Indian Cable Co. Ltd., 9, Hare Street, Calcutta.
40.	Shri S. K. Shah	„	Premier Automobiles Ltd., Kurla, Bombay.
41.	Shri T. S. Sitapati	„	National Insulated Cable Co. Ltd., Stephen House, 4, Dalhousie Square, Calcutta.

E. GOVERNMENT DEPARTMENT :

42.	Shri K. N. Ramaswamy	„	Development Wing, Ministry of Commerce and Industry, New Delhi.
43.	Shri R. P. Desai	„	Bombay Electricity Board, Bombay.
44.	Shri V. R. Raghavan	„	Central Water and Power Commission, Bikaner House, New Delhi.
45.	Shri J. N. Goswami	„	Damodar Valley Corporation, Alipore House, Calcutta.
46.	Shri K. M. Chinnappa		

APPENDIX III

(*Vide* paragraph 16)

Statement giving the c.i.f. prices furnished by Transformer (XTA) Agreement and the Collector of Customs

Serial number	Source of Information	Origin of import	Date of import	Output in KVA	H.T./L.T. Ratings	C.i.f. prices	Customs duty	Clearing charges	Landed cost
1	2	3	4	5	6	7	8	9	10
1	Tranformer (XTA) Agreement, Calcutta	U. K.	1955	25 KVA	11 KV/400 V	2,609	274	56	2,939
2	Ditto Ditto . .	Do.	1955	50 KVA	Ditto	3,383	355	72	3,810
3	Collector of Customs, Calcutta . .	Belgium	July 1954	50 KVA	6·6 KV/3·3 KV	5,144	541	125	5,810
4	Transformer (XTA) Agreement . .	U. K.	1955	100 KVA	3·3 KV/400 V	4,263	448	91	4,802
5	Ditto Ditto . .	Do.	1955	100 KVA	11 KV/400 V	4,679	491	100	5,770
6	Ditto Ditto . .	Do.	1955	250 KVA	3·3 KV/400 V	7,481	785	160	8,426
7	Ditto Ditto . .	Do.	1955	250 KVA	11 KV/400 V	7,766	815	166	8,747
8	Collector of Customs, Bombay . .	U. K.	August, 1955	250 KVA	11 KV/400 V	7,213	757	75	8,045
9	Collector of Customs, Calcutta . .	U. K.	April 1955	500 KVA	33 KV/3·3 KV	16,296	1,710	400	18,406
10	Transformer (XTA) Agreement . .	U. K.	1955	500 KVA	11 KV/400 V	12,860	1,350	274	14,484
11	Ditto Ditto . .	U. K.	1955	500 KVA	22 KV/400 V	15,258	1,602	326	17,186
12	Ditto Ditto . .	U. K.	1955	500 KVA	33 KV/400 V	17,070	1,792	364	19,226
13	Ditto Ditto . .	U. K.	1955	1000 KVA	11 KV/400 V	22,212	2,332	473	25,017
14	Collector of Customs, Calcutta . .	U. K.	Sept. 1955	1000 KVA	33 KV/400 V	35,629	3,740	890	40,259

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