TARIFF COMMISSION

GOVERNMENT OF INDIA

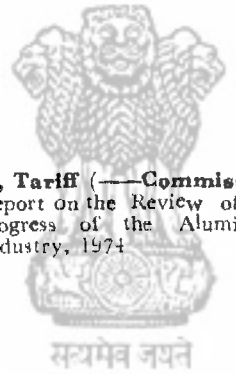
REPORT

ON

THE REVIEW OF THE PROGRESS OF THE ALUMINIUM INDUSTRY

BOMBAY

MAY,1974



India, Tariff (——Commission)
Report on the Review of the Progress of the Aluminium Industry, 1974

PERSONNEL OF THE COMMISSION

SHRI D. P. ANAND	*Chairman*
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1—6 T.C. Bom./74

GOVERNMENT OF INDIA

MINISTRY OF COMMERCE

New Delhi, the 22nd August, 1974

RESOLUTION

Tariffs

No. 10(1)-Tar/74—The Tariff Commission has submitted its Report (1974) on the Review of the progress of the Aluminium Industry as required in the Governments Resolution No. 1(6)-Tar/71, dated the 20th December, 1971. The Commission's recommendations and the Goverment's decisions thereon are given in the Table below:

TABLE

Sl. No.	Recommendation of the Tariff Commission	Decision of the Government
(1)	(2)	(3)
1	With regard to implementation of the Tariff Commission's recommendation made in its Report (1971) relating to adequate collection of data from the Small Scale Sector and on objective evaluation thereof, the Development Commissioner, Small Scale Industries, New Delhi, informed the Commission that "there is no control either statutory or otherwise over the small units. As such, small units do not generally comply with the request made	Government have taken note of this recommendation for implementation as far as possible. The attention of the Small Scale Sector of the Aluminium Industry is also drawn to this recommendation for supplying the necessary data to the Development Commissioner, Small Scale Industries, New Delhi. A national Census of Small Scale Industries is currently in progress in all the States and

(1)	(2)	(3)
	for the supply of any material. The Ministry of Industrial Development is consulting the concerned authorities for a legislation for Small Scale Industries which may help in annual collection and quick tabulation of data relating to the entire small scale sector". The Commission considers that it is essential that complete data should be collected from the Small Scale Sector. The Commission hopes that the proposed legislation for collection of adequate data for small scale sector which would help objective evaluation of its performance would be speedily enacted.	Union Territories. The results of the Census are likely to be available by the end of 1974. A decision in regard to enacting the proposed legislation will be taken after Census results become available.
2	A power intensive industry like Aluminium Industry requires constant supply of power with minimum fluctuation of supply voltage. Apart from the production loss during the power-off periods, there would be additional metal losses during the re-start period. Cutting of power would cause physical damage to the smelter equipment and reduce the life of expensive pot linings. The power shortage is also likely to continue for some time to come. For these reasons it is considered desirable that the primary aluminium units which may propose to augment their power supply by installing their own generating sets should be permitted to do so, at least as a standby.	The quantum of power required by the aluminium industry being substantial setting up of generating sets by the units to serve as stand-by during 'power off' periods is impractical. Consideration would however be given to the feasibility of setting up captive power stations for aluminium production.

(1)	(2)	(3)
3	The Aluminium Industry is at present in a fluid state. A detailed inquiry regarding the question of the continuance of protection to the industry would be undertaken in early 1976, by which time it is hoped that stable conditions would prevail and a more objective appraisal of the industry would be possible enabling specific recommendations being made to the Government.	Government have noted this recommendation.

ORDER

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

Sd/-

(S. G. BOSE MULLICK)

Secretary to the Government of India


सत्यमेव जयते

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APPENDICES


सत्यमेव जयते

REPORT ON THE REVIEW OF THE PROGRESS OF THE ALUMINIUM INDUSTRY

1. Introductory

1.1. The Commission submitted a Report to Government in September 1971 on the continuance of protection to the Aluminium Industry beyond 31st December 1971. Its main Recommendations were as under :

"(i) The Aluminium Industry in India has come of age and outgrown the need for further fiscal protection. Hence protection granted to the Industry need not be continued beyond 31st December, 1971 and the protective import duties on articles covered under item Nos. 66(a) and 66(1) of the First Schedule to the Indian Customs Tariff be replaced by revenue duties at the appropriate rates."

"(ii) Having regard to the views expressed by Bharat Aluminium Company the Public Sector undertaking and some of the State Governments, if Government desire to retain a degree of flexibility it might consider the possibility of continuing to deem the Aluminium Industry as protected within the meaning of Section 11(a) of the Tariff Commission Act, 1951 for a further period of three years or so."

1.2. By the erstwhile Ministry of Foreign Trade Resolution (Tariffs) No. 1 (i)-Tar/71 dated the 10th December, 1971 Government accepted recommendation (i) above and decided that after the withdrawal of the protective rates of duty the effective rates of revenue duty should "for the present" be maintained at the same level as the effective rates of the "existing" protective duty. Accordingly tariff protection to the Aluminium Industry was withdrawn from the 1st January, 1972 by the Indian Tariff (Amendment) Act,

1971. Regarding recommendation (ii), Government considered that the Aluminium Industry should be deemed to be protected within the meaning of Section 11(a) of the Tariff Commission Act, 1951, for a further period of five years ending with 31st December, 1976. They further considered that the progress of the industry should be reviewed periodically by the Tariff Commission to assess the position.

1.3. In pursuance of the above decisions of Government, the Commission decided that the first Review of the progress of the Aluminium Industry should be undertaken in 1973 and a Report submitted to Government.

1.4. Questionnaires were issued in March 1973 to known producers and consumers of Aluminium and their respective Associations. Data on costs of production were obtained from the primary producers of Aluminium. The Department of Mines and Metals (Ministry of Steel and Mines), the D.G.T.D., the Geological Survey of India (G.S.I.) and certain other Government Departments and also the State Governments were requested to furnish information/views on specific aspects of the Review. A list of those to whom questionnaires/letters were addressed and from whom replies or memoranda were received is given in Appendix-I.

1.5. In its last Report (1971) the Commission made certain Ancillary Recommendations for ensuring a healthy development of the Aluminium Industry. It also reiterated some of the recommendations made in its earlier Report of 1968, which were then yet to be fully implemented. By their letter dated the 5th December, 1972, the Ministry of Steel & Mines (Department of Mines) informed us that all the above recommendations had been implemented or suitable action initiated by Government. The present position regarding the extent to which each of the ancillary recommendations has been implemented is dealt with in the succeeding chapters at the appropriate places.

A. INGOTS

2. Capacity and Production

2.1. The four units, *viz.* Indian Aluminium Company (INDALCO), Aluminium Corporation of India (ALCOP), Hindustan Aluminium Corporation Ltd. (HINDALCO) and Madras Aluminium Company (MALCO) continue to be the main manufacturers of Aluminium Ingots as the Korba and Ratnagiri projects of Bharat Aluminium Company (Public Sector Unit) are yet to commence production. Between 1971 and 1973, the installed capacity of the Industry went up from 1,69,170 tonnes to 1,96,670 tonnes. The increase in capacity was accounted for as follows

(i) Expansion of INDALCO's Belgaum Smelter capacity from 30,000 tonnes to 40,000 tonnes.

(ii) Part of HINDALCO's phased expansion in their installed capacity from 80,000 tonnes to 95,000 tonnes; and

(iii) Increase in MALCO's capacity from 14,000 tonnes to 16,500 tonnes.

Production of ingots marginally increased from 178,179 tonnes in 1971 to 179,103 tonnes in 1972. But the level of production was lower during 1973 at 155,486 tonnes. This was to some extent due to extensive power cuts in the country.

2.2. Unit-wise capacity in 1971 and as at present and production since 1971 are given in the following Table:

TABLE I

Capacity and Production of Aluminium Ingots

(In tonnes)

	Licensed capacity as on 1-1-1973	Installed capacity as on			Production of Primary Metal		
		1-1-1971	1-1-1972	1-1-1973	1971	1972	1973
1	2	3	4	5	6	7	8
1. INDALCO							
(a) Hirakud .	20,320	20,320	20,320	20,320	23,137(114)	20,926(103)	17,661(87)
(b) Alupuram .	15,850	15,850	15,850	15,850	19,282(121)	19,335(122)	19,071(120)
(c) Belgaum .	60,000	30,000	36,100	40,000	37,480(125)	38,319(96)	39,694(99)
TOTAL .	96,170	66,170	72,270	76,170	79,889(121)	78,580(103)	76,426(100)
2. ALCOP .	8,700	9,000	9,000	9,000	7,559(84)	7,826(87)	5,169(57)
3. HINDALCO .	120,000	80,000	80,000	95,000	78,002(98)	78,503(98)	63,920(67)
4. MALCO .	25,000	14,000	16,000	16,500	12,719(91)	14,194(87)	9,971(60.4)
TOTAL .	249,870	169,170	177,270	196,670	178,179(105)	179,103(101)	1,55,486(79)

Figures in brackets indicate percentages of utilisation of capacity.

2.3. The utilisation of capacity of the industry for primary metal during the last three years was as follows :

	1971	1972	1973
Installed capacity (Tonnes) . .	169,170	177,270	196,670
Production (Tonnes)	178,179	179,103	155,486
Utilisation (Percentage) . . .	105	101	79

The utilisation of capacity which was 105 per cent in 1971 declined to 101 per cent in 1972 and to 79 per cent in 1973, mainly due to restrictions on power imposed by various States since 1971-72. INDALCO's utilisation which was 121 per cent in 1971 declined to 103 per cent in 1972, and to 100 per cent in 1973. ALCOP's utilisation in 1972 was 87 per cent but in 1973 was 57 per cent while in 1971 was 84 per cent. We have been informed that there has been a lockout in this unit since September, 1973. HINDALCO's utilisation was 98 per cent in both 1971 and 1972 and 67 per cent in 1973. Though the production facilities at this factory are for 95,000 tonnes, capacity to the extent of 15,000 tonnes could not be commissioned due to non-availability of power. Utilisation was lower in the case of MALCO in 1972 as it was 87 per cent against 91 per cent in 1971. It was much lower at 60 per cent during 1973 due to severe power cut imposed on the unit.

2.4. Future Expansion :

2.4.1. Apart from the four units now in production, the only other unit licensed to manufacture Aluminium Ingots is Bharat Aluminium Company (BALCO), a Public Sector Undertaking. The progress made by each of the units in establishment of capacity/additional capacity licensed to them is set out below :

INDALCO

In August 1972 an industrial licence was received by the company to expand its Belgaum Smelter capacity from

40,000 tonnes to 60,000 tonnes per annum. The Company has reported that corresponding expansion of Alumina Plant and Bauxite mining facilities are under way and it expects to commission the same by early 1974, provided supplies of steel and cement are available in time. The Company has also plans to further expand its Belgaum Smelter from 60,000 tonnes to 100,000 tonnes capacity per annum as per the original concept of the Belgaum project.

ALCOP

The Company has no plans to expand its capacity at Jaykaynagar till power is made available at suitable rates. The Company has surrendered a letter of intent granted to it in September, 1964, for expanding its capacity by 5,000 tonnes, due to lack of power supply. ALCOP's scheme for establishment of an integrated Aluminium Plant in Orissa with an installed capacity of 30,000 tonnes per annum was approved by Government and a licence was granted in 1971. The Company's application for import of Capital Goods for the first stage i.e. 15,000 tonnes per annum was cleared by Government. At the time of the Commission's last inquiry it was expected that the Plant would be commissioned by 1973-74. According to the company, the original estimate of investment in the project was Rs. 16.5 crores. But the final quotations for major plant and equipment revealed sharp escalation of prices in the indigenous plant equipment (cost of such equipment constitutes 90 per cent of the total cost). This resulted in sharp increase in the original estimates. While there is an increase in the cost of production, there was a reduction in selling price in May 1971. It is stated that this has jeopardised the viability of the project. As such, the Company, after reaching a very advanced stage of planning, suspended further implementation of the project. The Company has taken up the matter with the Government and the same is under the consideration of the Government.

HINDALCO

The Company had plans to expand its capacity from 80,000 tonnes to 100,000 tonnes by April 1972 and to 120,000

tonnes by the end of 1973. As against this, the Company had completed its expansion to 95,000 tonnes by April, 1972. However, this expanded capacity could not be commissioned as no power was made available to the Company by the U.P. State Electricity Board (UPSEB). Regarding the 2nd phase to raise the capacity to 120,000 tonnes, major equipment like rectifier, transformers etc. have already been received by the Company at the job site, but the construction work had to be slowed down due to shortage of power from UPSEB as well as non-confirmation about the supply of power for future. The Ministry of Steel and Mines has informed that consequent on the suspension of U.S. Economic Aid, the U.S. Exim Bank loan, which was arranged for financing import of Capital Goods required for the expansion of HINDALCO's smelter, was not forthcoming. The Comnpay was, therefore, asked to submit a revised import application which is under clearance by the Capital Goods Committee. Alternative arrangements for financing import of Capital Goods are then expected to be made. As such, the expansion of smelter of this unit is likely to be completed only by the end of 1974-75.

MALCO

Malco had completed the production facilities for additional 3,500 tonnes by September 1972. But the same could not be commissioned due to power supply restrictions. The second stage for the production of about 3,500 tonnes would have been ready by January, 1973, but in view of the power position it has been postponed. The company was expecting to complete its total licensed production facilities for 25,000 tonnes before the end of 1973.

BALCO

The Bharat Aluminium Company, a public sector undertaking, has been established for the manufacture of aluminium ingots at Korba (M.P.) and Ratnagiri (Maharashtra) with capacities of 100,000 and 50,000 tonnes respectively. The Korba Aluminium Complex, which is based on the bauxite deposits in the Amarkantak and Phutkapahar areas in Madhya

Pradesh and electric power from the Korba Thermal power station, is expected to produce 200,000 tonnes per annum of alumina and 100,000 tonnes per annum of aluminium metal including about 60,000 tonnes per annum of aluminium semis (rolled and extruded products and wire rods). The project has the assistance of M/s. Chemokomplex of Hungary up to the Alumina stage and of the USSR for the Smelter and Fabrication facilities. The first stream of the alumina plant was commissioned in April, 1973. The smelter and fabrication facilities are expected to be commissioned in stages starting from end of 1974 and ending by middle 1976. The detailed project reports for the Bharat Aluminium Company's 2nd unit at Ratnagiri with an initial capacity of 50,000 tonnes of Aluminium per annum, have been prepared and are under the consideration of Government. This project is based on the utilisation of bauxite deposits located at Udgiri and Dhangarwadi in Kolhapur district in Maharashtra and hydel power from the neighbouring Koyna Hydel Station. This project is expected to have a capacity to produce 50,000 tonnes of aluminium metal per annum including 25,000 tonnes of conductor grade wire rods. The cost estimates of the project have been approved by the Public Investment Board and action for obtaining Government sanction is under way. The construction of the integrated alumina and aluminium complex will take 60 months after clearance of the project by Government. According to D.G.T.D., the first stage of the Ratnagiri unit with an installed capacity of 25,000 tonnes is expected to go into production by 1976-77 and the second stage by 1977-78.

2.4.2. At the time of the last inquiry it was expected that all the expansion plans indicated above would be completed by 1975-76. However, due to the changed circumstances of power famine and also due to the delay in the commissioning of Bharat Aluminium Company's plants, the expansion plans which would raise the aggregate a capacity of the industry to about 430,000 tonnes of Aluminium Ingots, are expected to be completed a few years later. The eventual capacity would be as under :

TABLE 2

Future installed capacity for Aluminium Ingots

		(To nnes)
Existing capacity		196,670
Additional capacity		
(*A*) *Expansion of existing units*		
INDALCO	20,000	
HINDALCO	25,000	53,500
MALCO	8,500	
(*B*) *New units*		
ALCOP . . . . . (Orissa Project)	30,000	
Bharat Aluminium Co.:		1,80,000
(a) Korba	100,000	
(b) Ratnagiri	50,000	
Total additional capacity . .		2,33,500
TOTAL		4,30,170

2.5. World production of Aluminium:

Statistics of world production of primary Aluminium metal for the three years 1970 to 1972 are given in Appendix II. World production of Aluminium metal was 10.22 million tonnes in 1970. It increased by 6.3 per cent in 1971 to 10.88 million tonnes and by 6.2 per cent in 1972 to 11.54 million tonnes. U.S.A. is the major producer accounting for 34 per cent of the total production. India's share is insignificant, being just 1.5 per cent in 1970, 1.7 per cent in 1971 and 1.5 per cent in 1972.

B. SEMI-MANUFACTURES

2.6. Sheets, Circles and Strips:

2.6.1. The total annual installed capacity for Aluminium Sheets and Circles at the time of the last inquiry (1971) in respect of three major manufaturers was 42,400 tonnes. This has gone upto 53,900 tonnes in 1973. The increase in capacity by 11,500 tonnes was accounted for by INDALCO's new Sheet Plant at Taloja (Maharashtra). As regards 12 other units in the D.G.T.D.'s list, the D.G.T.D. has informed that no separate capacity figures are available. Three of these units have furnished to us information about their installed capacity and the same aggregates to 5882 tonnes.

2.6.2. INDALCO has informed that it had applied for expansion of its Taloja Sheet plant by 6,825 tonnes and Governments' approval is awaited. MALCO is also having a licenced capacity of 3,500 tonnes per annum for Sheets and Circles. It is expected that the same would materialise by 1973-74. The available information relating to capacity and production is given in Appendix III. Wherever the units have furnished the information, the figures supplied by them have been adopted and for others, the D.G.T.D.'s figures have been adopted. The information is, however, incomplete.

2.6.3. Production of Sheets and Circles showed marked improvement as it went up from 42,292 tonnes in 1970 to 45,576 in 1971 and 56,680 tonnes in 1972. It was 53,621 tonnes in 1973.

2.6.4. Regarding the performance of the small scale sector the Commission in its Report (1971) recommended that:

> "No estimate of demand or study of consumption pattern or other projections of Aluminium would be complete without a proper assessment of the performance of the small scale sector. Early steps should accordingly be taken for adequate collection of data from the small scale sector and an objective evaluation thereof"

[*Paragraph* 5.2.3.2]

Regarding the implementation of this recommendation the Development Commissioner Small Scale Industries, New Delhi was addressed. In his reply he has informed us that there is no control either statutory or otherwise over the small units. As such, small units do not generally comply with the request made for the supply of any material. The Ministry of Industrial Development is consulting the concerned authorities for a legislation for Small Scale Industries which may help in annual collection and quick tabulation of data relating to the entire Small Scale sector. He has added that the Small Industries Service Institutes in various States have been requested to pursue the units in their respective States for the collection of data. The Director, SISI, Calcutta has stated that 43 manufacturers of Aluminium semi-manufacturers in West Bengal were contacted but data could be collected from only five. This is not a happy state of affairs. It is essential that complete data should be collected from the Small Scale Sector. We hope that the proposed legislation for collection of adequate data for small scale sector which would help objective evaluation of its performance would be speedily enacted.

2.6.5. With regard to Aluminium strips, one of the items of semi-manufactures, the D.G.T.D. (Non-Ferrous Metals Directorate) has brought to our notice that it has received from industrial consumers producing lamp caps, gang condensors etc. complaints regarding the low quality and tolerance limits of the supply of close tolerance Aluminium strips and requests for special import of strips. The Directorate considers that due to the Price Control on Aluminium Products and also the shortage of indigenous production of metal due to power shedding etc. there is a tendency on the part of semi-manufacturers to produce strips for industrial consumption on conversion basis using customer's metal. The Directorate has considered it necessary to re-establish favourable conditions for meeting the increasing demand of close tolerance Aluminium strips for which not only the existing available capacity is required to be enhanced but also new capacities need to be established particularly with a view to accelerating the process of import substitution.

2.7. Aluminium Foils and Container Sheets:

2.7.1. India Foils Ltd. INDALCO and ALCOP continue to be the manufacturers of foils in the country. Data relating to their capacity and production are given below :

TABLE 3

Capacity and Production for Foils and Container Sheets

(*In Tonnes*)

Unit	Installed capacity		Production during			
	1971	1973	1970	1971	1972	1973
India Foils I td. .	4,200	4,200	3,313	2,637	2,579	2,906
INDALCO .	2,500	2,500	2,766	2,067	2,408	2,662
ALCOP . .	500	500	237	390	516	358
TOTAL	7,200	7,200	6,316	5,094	5,503	5,926

2.7.2. The fall in production of Foils and Container Sheets since 1971 is attributed to the general power shortage. The lower production affected the off-take of Foils by consuming industries. India Foils Ltd. has informed us that in response to the Ministry of Steel and Mines Press Note announcing the need for additional capacity for Aluminium foils to the extent of 6,000 to 8,000 tonnes, the company has submitted an application for expansion of its capacity to 5,000 tonnes. INDALCO has also informed us that application for expansion of their Foils Plant at Kalwa (Maharashtra) by 2,500 tonnes is under the consideration of the Government

2.7.3. India Foils Ltd. has stated that indigenous raw materials with the exception of Aluminium Foils Stock, are in short supply. In particular, the quality of indigenous

paper is reported to be well below international standards and there is no consistency in quality. Besides, it has informed that the prices of raw materials are extremely high and deliveries very uncertain. Regarding imported raw materials, difficulties have been mentioned in arranging timely arrivals in adequate quantities primarily due to (i) delay in issuance of import licences and (ii) items being banned or restricted and import licences being issued from Rupee Payment Area (RPA). Since the materials required by the Company were not available from RPA countries, it had to surrender most of the RPA allocation and the balance was utilised for obtaining release order in favour of the S.T.C. for one particular raw material.

3. Domestic demand

3.1. In connection with the formulation of policies and programmes relating to the development of metallurgical industries in the Fifth Plan period, the Planning Commission constituted a Task Force for Non-Ferrous Metals under the Chairmanship of the Secretary, Department of Mines. A sub-Group under the Chairmanship of the Joint Secretary, Department of Mines was set up for Aluminium and Magnesium for extensively studying various aspects of the Aluminium Industry and make recommendations. The Task Force submitted its Report in January, 1973. It estimated the total demand for Aluminium in the country at 240 thousand tonnes for 1973-74, progressively increasing by about 40 thousand tonnes per annum to 433 thousand tonnes by the end of the Fifth Plan i.e. 1978-79. While estimating the demand, the Task Force adopted a growth rate of 12 per cent for the Fourth Plan period and for the first two years of the Fifth Plan period and 10 per cent for the last three years of the Fifth Plan period.

3.2. Regarding the consumption pattern of Aluminium in the country, no major change in the Fifth Plan period is envisaged as the Electrical industry would continue to be the major (50%) consumer of Aluminium in the country. According to the Task Force this strikingly different pattern of consumption in India as compared to that in the

Regarding the implementation of this recommendation the Development Commissioner Small Scale Industries, New Delhi was addressed. In his reply he has informed us that there is no control either statutory or otherwise over the small units. As such, small units do not generally comply with the request made for the supply of any material. The Ministry of Industrial Development is consulting the concerned authorities for a legislation for Small Scale Industries which may help in annual collection and quick tabulation of data relating to the entire Small Scale sector. He has added that the Small Industries Service Institutes in various States have been requested to pursue the units in their respective States for the collection of data. The Director, SISI, Calcutta has stated that 43 manufacturers of Aluminium semi-manufacturers in West Bengal were contacted but data could be collected from only five. This is not a happy state of affairs. It is essential that complete data should be collected from the Small Scale Sector. We hope that the proposed legislation for collection of adequate data for small scale sector which would help objective evaluation of its performance would be speedily enacted.

2.6.5. With regard to Aluminium strips, one of the items of semi-manufactures, the D.G.T.D. (Non-Ferrous Metals Directorate) has brought to our notice that it has received from industrial consumers producing lamp caps, gang condensors etc. complaints regarding the low quality and tolerance limits of the supply of close tolerance Aluminium strips and requests for special import of strips. The Directorate considers that due to the Price Control on Aluminium Products and also the shortage of indigenous production of metal due to power shedding etc. there is a tendency on the part of semi-manufacturers to produce strips for industrial consumption on conversion basis using customer's metal. The Directorate has considered it necessary to re-establish favourable conditions for meeting the increasing demand of close tolerance Aluminium strips for which not only the existing available capacity is required to be enhanced but also new capacities need to be established particularly with a view to accelerating the process of import substitution.

4. Raw Materials and Power

4.1. The raw materials required for the production of Aluminium ore Bauxite, Caustic soda, Soda ash, Lime, Petroleum coke, Cryolite, Flourspar, Aluminium fluoride and Pitch. At the time of the 1971 inquiry, calcined petroleum coke, cryolite and aluminium fluoride were partly imported. Cathode carbon blocks, calcined anthracite coal and Metallurgical coke of low ash content were wholly imported. The D.G.T.D. has now informed us that except low ash metallurgical coke and pre-baked carbon blocks, most of the materials are available indigenously and Aluminium Fluoride, acid grade Flourspar and calcined anthracite coal (calcined petroleum coke) are partially available in the country. The position relating to each of the principal raw materials is dealt within the following paragraphs.

4.2. Bauxite :

4.2.1. Since the Commission's inquiry in 1971, the Geological Survey of India's (GSI) search for bauxite deposits located either close to the coastal districts or to installed/planned aluminium plants was reported to have been intensified and as many as 35 occurances were investigated systematically. The total reserves of measured, indicated and inferred bauxite in India upto August 1973 have been estimated at 317 million tonnes as against 227 million tonnes in 1971. The State-wise break-up in 1971 and as at present is given in Appendix -IV.

4.2.2. Regarding the beneficiation of low-grade bauxite ore, the Government had obtained the services of Shri Rubikov, an expert from UNIDO. The expert had submitted certain interim recommendations/conclusions to the Ministry. His recommendations for future investigation of bauxite are stated to be under the consideration of Government.

4.2.3. The G.S.I. has informed us that priority has been given for low grade ores in association with the high grade pockets for beneficiation tests. Accordingly the bulk sample collected by the GSI from the Amarkantak Plateau within the BALCO lease-hold were sent by BALCO to I.B.M (Indian Bureau of Mines) Laboratory. The results of the tests

are awaited. The G.S.I. has also sent to the IBM laboratory the samples drawn from Kutch, Gujarat and Jamirapat area (Bihar) where the reserves of the isolated low grade ore are estimated to be more than 2 million tonnes and results of the tests are awaited. MALCO has shown interest in beneficiation studies on the Kolli hills bauxite and it is understood that the I.B.M. has taken up the issues with MALCO. The project Manager of the National Industrial Development Corporation Ltd., New Delhi, has claimed that he has achieved a technical break-through in this field. GSI has requested him to take up the beneficiation studies of low grade bauxite of Phutka Pahar area on a priority basis.

4.3. **Alumina :**

Indigenously available Bauxite is converted into Alumina for being processed into ingot. At the time of the last inquiry the total installed capacity of the four primary metal manufacturers for Alumina was 280,000 tonnes. This has been increased to 340,000 tonnes in 1971 and to 360,000 tonnes in 1972 and 1973. Actual production of Alumina was, however, higher than the installed capacity at 380,041 tonnes in 1971 and 367,971 tonnes in 1972. Unit-wise capacity and production of Alumina are given below :

TABLE 4

Capacity and production of Alumina

(Tonnes)

Name of Unit	Installed capacity as on 1st January			Production during		
	1971	1972	1973	1971	1972	1973 (January -June)
INDALCO .	129,000	149,000	149,000	166,700	156,080	62,370
ALCOP . .	18,000	18,000	18,000	14,434	14,709	7,920
HINDALCO .	160,000	160,000	160,000	166,122	165,780	62,443
MALCO . .	33,000	33,000	33,000	32,785	31,402	4,466
TOTAL .	340,000	360,000	360,000	380,041	367,971	137,199

Production of Alumina was in excess of the installed capacities in the cases of INDALCO and HINDALCO. INDALCO has attributed this surplus production to process improvement. The four manufacturers have also furnished their estimates of capacity for 1974-75 and production for 1973, 1974 and 1975 as in the following Table:

TABLE 5

Estimated capacity and production of Aluminium

(*In* '000 *tonnes*)

Name of Unit	Estimated capacity	Estimated production		
	1974—75	1973	1974	1975
INDALCO .	204	174	207	232
ALCOP . .	18	16	16	16
HINDALCO . .	160@	155	165	240
MALCO	53	20	52	53
TOTAL . .	435	365	440	541

4.4. **Caustic Soda :**

Caustic soda is required by the Aluminium Industry for digestion of bauxite for converting it into Alumina. All the producers have complained about the shortage of caustic soda. The problem has been aggravated by the power cuts and also shortages of carbon electrodes essential for the production of caustic soda. The Task Force on the non-ferrous metals estimated the demand for caustic soda during 1974-75 at 52,000 tonnes and 85,000 tonnes by the end of the Fifth Plan period i.e. 1978-79. As the supply is expected to be short of demand, the Task Force has recommended for an early decision by Government the establishment of additional

@Installed capacity is to be increased corresponding to primary metal production.

capacity for this item. The D.G.T.D. has informed that on account of shortage of Caustic soda in the country import of this item was recommended in one or two cases. The Task Force on Non-ferrous metals has suggested that ways and means for optimum recycling of caustic soda may be devised and introduced in the new plants so that lower grade bauxite also could be utilised by them.

4.5. **Calcined Petroleum Coke:**

At the time of the last inquiry, there was only one producer of this item, viz. India Carbon Ltd. Since then, Indian Oil Corporation's calcination plant at Barauni has been commissioned. The present total capacity for Petroleum Coke is 141,000 tonnes which would produce about 105,000 tonnes of calcined petroleum coke. This is stated to be sufficient to meet the present demand in the country. The Task Force on non-ferrous metals has anticipated a shortage of this item by 1974-75. The shortage for the Aluminium Industry alone would be about 15,000 tonnes. Hence, to meet the fast increasing demand, the Department of Mines is pressing the Ministry of Petroleum and Chemicals to augment the capacity for the calcined petroleum coke in the new oil refineries. In its 1968 Report the Commission has indicated that Petroleum coke being a bye-product of indigenous crude, it would be desirable to ascertain the reasons for its high cost and if possible to bring it down. This recommendation was reiterated in the 1971 Report. INDALCO has reported that the ex-factory price of this material was increased twice by India Carbon Ltd., in February 1972 by Rs. 63 per tonne and again in January 1973 by Rs. 68 per tonne bringing up their price ex Gauhati to Rs. 650 per tonne. INDALCO had taken up the matter with India Carbon Ltd. and was informed that this was due to the high price of raw coke, a bye-product of refineries. The Company has further reported that the price charged by Indian Oil is practically on par with that of India Carbon Ltd. HINDALCO has also complained about frequent revision of the price by the suppliers.

4.6. **Cryolite and Aluminium Fluoride:**

4.6.1. The manufacturers of Aluminium have complained about the disparity in the prices of indigenous and imported

cryolite. INDALCO has complained that the price of indigenous cryolite was increased by Rs. 585 per tonne from 1-1-1972 bringing it to Rs. 5,585 as against the average landed price of Rs. 4481 for imported cryolite and that the price of Aluminium Fluoride was increased from Rs. 6400 to Rs. 6840 per tonne. INDALCO has also complained that the quality of indigenous aluminium fluoride is inferior compared to that of the imported one. ALCOP has complained that the quality of Aluminium fluoride supplied by Everest Refregerent Ltd. is inferior. In its earlier Reports the Commission, on the basis of similar complaints, had recommended an investigation into the prices of indigenous cryolite and aluminium fluoride. Government accordingly referred the matter to the Bureau of Industrial Costs and Prices. On the recommendation of the Bureau, Government permitted increase in the prices of these products.

4.6.2. Another recommendation of the Commission on these items made in the 1968 Report and reiterated in the 1971 Report was :

> The duty on cryolite and aluminium fluoride is 27½ per cent *ad valorem* standard and 17½ per cent preferential under item No. 28 of the I.C.T. Schedule while the duty on the raw material required for their production is 60 per cent. This tariff anomaly needs to be rectified and the duty on the raw material should be brought down to the same level as that of the finished material"
>
> [*Para* 9.8.7.3 *of the* 1968 *Report.*]

Regarding the implementation of this Recommendation the Ministry of Steel & Mines intimated that the Department of Revenue & Insurance was initially not agreeable to reduce the duty on fluorspar. Since the Working Group on Aluminium had also made a similar recommendation, the Department of Revenue and Insurance re-examined the matter and proposed to increase the duty on Cryolite and Alumina Fluoride to make it on par with that of imported Fluorspar and thereby remove the tariff anomaly. However, with the indigenous acid grade fluorspar becoming available, the Ministry of Steel and Mines decided not to pursue the matter further.

4.7. Pitch :

4.7.1. Pitch is used by the Aluminium Industry for making anodes and also in the cathode lining. The only supplier of pitch in the country continues to be Hindustan Steel Ltd. INDALCO has informed us that even though there was no shortage of pitch during the last two years, a shortage may develop in future with the Commissioning of the Bharat Aluminium Company's plants and suggested that a tar distillation plant may be set up well in time at the Bokaro Steel Plant where considerable quantities of good tar would become available as a bye-product of the coke ovens. Further, the company has reported that the price of pitch has gone up by Rs. 300 (67%) in April, 1972. This increased the cost of the metal by Rs. 60 per tonne. HINDALCO has also complained about the price of pitch and mentioned that the quality of pitch is not up to their requirement. ALCOP's complaint is about the difficulty in getting the desired quality and quantity of pitch.

4.7.2. The Commission in its Report (1968) had recommended as follows :

> "We would invite the attention of the Hindustan Steel Ltd. to the need for improvement in the quality and for stepping up the capacity for pitch in order to meet further requirements of the Aluminium Industry".
>
> [*Paragraph* 9.9.]

This recommendation was reiterated in the 1971 Report of the Commission. The Ministry of Steel & Mines have informed that Hindustan Steel Ltd. is taking steps to increase the production of pitch as far as possible. It has been stated that the proposals of Bhilai Steel Plant to add one Coke oven Battery and of Rourkela Plant to add half a Battery may improve the availability of pitch, Regarding quality, HSL has stated that, by and large, the requirements of all the manufacturers are being met and have pointed out that it would not be possible to produce a very large number of grades of pitch in a steel plant in view of the fact that the plant has to change the operational conditions and provide for different equipments for making and storing such different

grades. The Company is, therefore, of the view that whenever further capacities in the production of Aluminium are planned, it would be desirable that the technical officers of such plants discuss the specifications of pitch required by them with the technical officers of HSL Plant, well in advance and also ensure that their production technology could utilise the grades already established in the steel plants. The Ministry of Steel & Mines (Department of Mines) have advised the manufacturers of Aluminium accordingly.

4.8. **Carbon Blocks:**

The Commission in its 1971 Report reiterated its earlier recommendation that:

> "It would be desirable to explore the possibility of indigenous manufacture of pre-baked carbon blocks and plates also instead of making substantial outlays on their imports".
>
> [*Para* 9.10 *of the* 1968 *Report.*]

Regarding the implementation of this recommendation, the Ministry of Steel & Mines have informed us that the D.G.T.D. has undertaken a survey regarding the requirements of cathode blocks and plates required by the Aluminium Industry by the end of the Fifth Plan as well as the Sixth Plan periods. Once the relevant data are collected, Government would take a decision about the creation of capacity in this field. In the meanwhile the Task Force on the Non-ferrous Metals has recommended in its Report of January 1973 the setting up of a unit with an installed capacity of 6,000 tonnes of pre-baked carbon blocks/plates in the country.

4.9. **Electric Power:**

4.9.1. The years 1971 to 1973 were years of power shortage throughout the country and these difficulties are likely to continue for some time. The manufacturers of Aluminium have informed us about the difficulties encountered by them regarding power supply.

INDALCO

The Company's power requirements had been fully met in the past. However, due to generating problems and the drought in 1971-72, power cuts of 25 and 50 per cent were imposed on the Company's units at Belgaum in Mysore State and Hirakud in Orissa respectively. As a result , in 1972 alone the company reported a loss of production of 6150 tonnes of metal. In addition it also fears losses during the restart period and damage to smelter equipment as well as reduced life for pot linings due to frequent stoppages of power.

ALCOP

The Company has reported frequent power cuts. The Company's purchased power requirement was at 20MW. Due to shortage of power, the Company volunteered to reduce it to 17MW subject to continuous supply of the same. However even this reduced requirement was not met by Damodar Vally Corporation Ltd., from whom the Company gets power. According to the Company, such frequent shortages of power cause damage to the smelter, reduce the life of electrolytic cells and also increase the consumption of costly chemicals like cryolite and Aluminium fluoride. Further, it has complained that the present rate of 6.2 paise /KW. inclusive of fuel surcharge and electricity duty is too high. The Company is also having its own generating unit capable of producing 11 to 12 MW power. Being an old plant, the company's cost of production of power is reported to be much higher. This position was reported to have been further aggravated by the nationalisation of captive coal mines which, according to the Company, resulted in an increase in the price of coal.

HIDALCO

The Company has an Agreement with Uttar Pradesh State Electricity Board (UPSEB) for the supply of 50 MW. However, since November, 1966 the company has been facing power cuts on account of insufficient rains. During 1971-72 and 1972-73 the power cut was in the range of 25 to 50 per cent. Under the emergency assistance and parallel operation agreement, the company was allowed to use another 100

million units at the rate of about 14.2 paise per unit exclusive of electricity duty. During October 1972 to May 1973 this rate, according to the company, was raised to about 28.02 paise. The Company's disputes with UPSEB forced it to go to the Supreme Court for restoration of power, which was disconnected completely in May, 1973. The expanded facility for 15,000 tonnes was ready by April, 1972 but the additional power required by it was not supplied by UPSEB.

MALCO

MALCO also experienced power supply restrictions during the last two years. As a result, their first stage of expansion, which was ready by September, 1972, could not be commissioned and due to severe power restrictions, the plant was reported to have almost totally shut down for some time in 1973.

4.9.2. The following Recommendations were made in the previous Reports of the Commission on the supply of power to the Aluminium Industry:

"1. Having regard to the large expansion programmes for this industry and the importance of its role to economic development, its growing need for adequate supplies of electric energy at economic prices—a point to which attention has been successively drawn by the Commission in its earlier reports needs re-emphasis".

"2. It would be desirable to phase the implementation of power programme in such a way that the actual requirements of aluminium can be readily determined".

"3. It would be desirable for Government to examine again the question of electricity tariffs in detail particularly with a view to determining the range of disparities between one State and another and to devise ways and means for bringing about such uniformity as may be possible without affecting the financial interests of the parties concerned".

"4. It seems to us opportune that some preliminary thinking should be given to the subject of a National Grid in consultation with the State Governments with particular reference to the possibility of building up such a grid in the interest of developing electro-chemical and electro-metallurgical industries in the country whose electricity bill constitutes a major item of cost".

garding the extent of implementation of the above recommendations, the Ministry of Irrigation and Power have informed us that they have drawn up a Power Generation Plan for the decade 1971-81 on which active follow-up action is being taken for implementation. With a view to take effective measures for immediately removing power shortages extensive studies have also been made in the Central Water and Power Commission for the period 1972-77. According to these studies the available power is utterly inadequate to meet the continually growing demands of the industrial and agricultural sectors. The target for March 1974 is 23 million KW and it is likely that due to unavoidable reasons, there will be a shortfall of one to two million KW. Regarding the electricity tariffs the Central Water and Power Commission has informed us that it is not possible to introduce uniform electricity tariffs throughout the country under the present set up where each State has an autonomous Electricity Board. The cost of generation differs from State to State, depending on the mix of different types of projects, hydro, thermal and nuclear, and the extent of transmission systems. However, where the question of tariff for power supply to electro-chemical and electro-metallurgical industries is concerned, special concession is always given. As regards the formation of an All-India Grid System, the Ministry of Irrigation and Power have stated that during the Fourth Plan, the Central Water & Power Commission had decided on Inter-State and Inter-Regional lines being formed under a Centrally sponsored programme. Accordingly, necessary financial assistance is being given to the State Governments to facilitate speedy establishment of regional Grids with the ultimate object of evolving an All-India Grid system. Hope has been expressed that such a system under the administrative and financial control of one organisation would bring

about uniformity in the rates of Supply power in the country as a whole. In this connection the Mysore State Electricity Board has stated that "Mysore is generating electricity at a very competitive cost and if the cheap power that is produced in the State is diverted to Electro-Chemical and Electro-Metallurgical industries located in other States this can be only at the cost of development of Mysore". Hence they are of the view that the proposal for providing a National Grid is not in the interest of that State and that, in view of the fact that the regional ties are yet to be well established in the country, establishment of a National Grid seems to be premature even from the normal operational point of view.

4.9.3. A power intensive industry like Aluminium Industry requires constant supply of power with minimum fluctuations of supply voltage. Apart from the production loss during the power-off periods, there would be additional metal losses during the re-start period. Cutting of power would cause physical damage to the smelter equipment and reduce the life of expensive pot linings. As mentioned earlier, the power shortage is likely to continue for some time to come. In the circumstances, we consider it desirable that the primary aluminium units which may propose to augment their power supply by installing their own generating sets should be permitted to do so, at least as a stand by.

5. Quality and Standards

5.1. In 1971, the Commission found that by and large, the quality of the indigenous primary metal seemed to be quite satisfactory although for sheets and circles there appeared to be further room for improvement. The consumers who have now replied to our questionnaire have generally expressed satisfaction about the quality of the indigenous aluminium products. However, a few adverse comments have also been received. M/s. Devidayal Electronics & Wires Ltd., Thana (Maharashtra) have stated that there is no consistency in quality and the characteristics of E.C. grade Aluminium wire bar vary from lot to lot thereby creating drawing difficulties. M/s. Power Cables Pvt. Ltd., Bombay have expressed the view that E.C. Grade Aluminium produced by Indian Aluminium Co. Ltd., and Madras Aluminium Co. Ltd. needs improvement. M/s. Aluminium

Cables & Conductors (U.P.). Pvt. Ltd., Calcutta have stated that the quality of indigenous Aluminium Ingots has much improved. M/s. National Insulated Cable Co. of India Ltd., Calcutta have informed us that the quality of wire bars supplied by Hindustan Aluminium Corporation Ltd. is not satisfactory and that this fact has also been brought to the notice of the manufacturer. According to M/s. Jeewanlal (1929) Ltd., Calcutta (Manufacturers of Aluminium utensils) the quality of rolled products fabricated by secondary producers varies in degree from fabricator to fabricator.

5.2. The Commission had recommended in its 1971 Report (paragraph 6.2) that it would be in the interests of the producers themselves to whole-heartedly join the I.S.I. Certification Mark Scheme and thus obtain official authorisation of the quality of their products. The primary producers are yet to join the above scheme. On the other hand they have expressed their inability to do so. Hindustan Aluminium Corporation Ltd. have stated that since strict quality control measures are adopted by them, and no complaints were received from customers, joining the I.S.I. Certification Marks Scheme would only add to the cost of production. Indian Aluminium Co. Ltd. have stated that their own test Certificates are accepted by the parties. Aluminium Corporation of India claim to follow the Standard Specification for their products. Madras Aluminium Co. Ltd. do not manufacture rolled products. They also claim strict quality control at their end for ingots manufactured by them. As against the primary manufacturers, two secondary manufacturers have joined the Scheme. They are M/s. The Metal Rolling Works Pvt. Ltd., Bombay for Aluminium Sheets and Circles and M/s. Rashtriya Metal Industries Ltd., Bombay for Aluminium Circles. One other secondary manufacturer, M/s. Popular Metal Works & Rolling Mills, Bombay have stated that they are in the process of getting the I.S.I. Certification Mark.

5.3. In 1971, four Draft Indian Standards were in the draft stage. Of these the following two have since been finalised and published:

(i) Dimensions for Wrought Aluminium and Aluminium Alloys extruded hollow sections (IS:6477-1972) and

(ii) Aluminium alloy ingots for bearings (IS: 6754-1972).

The other I.S.I. Standards on Aluminium and Aluminium Alloys published since 1971 are :

IS : 184—1971—E.C. Grade Aluminium rod produced by rolling (first revision).

IS : 2678—1972—Dimensions for Wrought Aluminium and Aluminium alloys drawn tube (first revision).

IS : 3445—1971—Aluminium tee-Sections.

IS : 6475—1971—Aluminium tee bars for marine use.

IS : 6449—1971—Aluminium bulb angles for marine use.

IS : 6476—1971—Aluminium bulb plates for marine use.

IS : 6751—1972—Aluminium alloy castings and strips for bearings.

The following 4 Indian Standards are in the Draft stage :

(i) Draft Indian Standard specification for bars and extruded sections of aluminium-copper-mangnesium-silicon—manganese alloys for aircraft purposes;

(ii) Specification for wrought aluminium and aluminium alloys, plate (for general engineering purposes), (second revision of IS : 737);

(iii) Specification for wrought aluminium and aluminium alloys sheet and strip (for general engineering purposes) (second revision of IS: 737); and

(iv) Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (revision of IS : 617).

6.1. Import Control Policy :

6. Imports and Exports

6.1.1. During the licensing period 1971-72, import of E.C. grade Aluminium only was allowed to "Actual users" on restricted basis in view of the domestic shortage. As an export promotion measure, imports of Aluminium were allowed to registered exporters of Aluminium products. All such imports were canalised through M.M.T.C. The same policy was broadly pursued during the subsequent

licensing period 1972-73 also. Further, during these two years 'Actual Users' in drug and pharmaceutical industry were also allowed to import, on a restricted basis, 34 gauge and thinner gauge Aluminium strips in coils for making antibiotic vial caps. During 1973-74, imports of E.C. grade Aluminium were discontinued and imports of only Aluminium circles, sheets, strips, wire rods, wire and foils of minimum purity of 99.7% and above were allowed on restricted basis, to Actual Users". During 1973-74, "Actual Users" in the Small Scale Sector also were allowed to import Aluminium circles, sheets, strips, wire rods, wires and foils of minimum purity of 99.7% and above upto 10% of the face value of the licence or Rs. 5,000/- whichever was less.

6.1.2. For the current licensing year 1974-75, imports of E.C. grade aluminium are allowed on restricted basis to 'Actual Users' (conductors manufacturers) and such imports are to be canalised through M.M.T.C. Imports of Aluminium circles, sheets, strips, wire rods, wires and foils of minimum purity of 99.7% and above are also allowed to 'Actual Users' on restricted basis. The manufacturers of Aluminium metal have expressed the view that, although due to the 'current' power shortage in the country there was a need to permit imports, there may not be any case for allowing imports of Aluminium in future in view of the expansions in the existing units and the commissioning of new units, on the other hand, they expect a surplus production by 1975-76 which would be available for exports.

6.2. Imports :

The quantity and value of imports of Aluminium products from 1971 onwards are given below :

Product/Year	Quantity (Tonnes)	Value (Rs. in lakhs)
(a) *Ingots :*		
1971	16,769	666
1972	1,811	84
1973 (January-October)	N	N

Product/Year	Quantity (Tonnes)	Value (Rs. in lakhs)
(*b*) *Sheets and Circles:*		
1971	149	28
1972	413	87
1973 (January-October)	311	47
(*c*) *Foils:*		
1971	74	15
1972	62	19
1973 (January-October)	96	20

(*Source* : D.G.C.I. & S.) (N : Negligible).

There was significant reduction in imports of Aluminium ingots in 1972 as compared to 1971.

6.3. Export Policy :

During 1971-72, only exports of commercial grade Aluminium by primary producers and of semis in different forms were allowed "on merits". During the subsequent licensing periods, 1972-73, 1973-74 and 1974-75 exports of Aluminium semis and manufactures only were allowed. Against export of Aluminium utensils, the import replenishment of 10% is allowed for import of Aluminium ingots, sheets and circles. However, if the manufacture is carried on under 'Customs Bond' then the replenishment percentage is 50% instead of 10%.

6.4. Exports :

Statistics of exports of Aluminium and its manufactures since 1971 are as follows :

(*Quantity in tonnes*)
(*Value in lakh Rs.*)

	1971	1972	1973 (Jan.-May)
Ingots:			
Quantity	600	Nil	Nil
Value	34	Nil	Nil

(*Quantity in tonnes*)
(*Value in lakh Rs.*)

	1971	1972	1973 (Jan.-May)
Sheets & Circles:			
Quantity	451	16	104
Value	31	1	7
Foils :			
Quantity	361	77	466
Value	26	7	37

(*Source* : D.G.C.I. & S.)

Ingots could be exported only in 1971. Exports of semi-manufactures decreased substantially mainly due to lower production of metal in the country owing to power shortages. The manufacturers of Aluminium expect that indigenous production of the metal would increase in future and substantial tonnage would be available for exports. They have, therefore, pleaded that the principal raw materials for the production of aluminium should be made available at prices comparable to the international prices and that adequate incentives for exports be granted.

7.1. Customs Duty :

7. Customs Duty and Excise Duty

At the time of the 1971 inquiry, the rates of Customs (Protective) duty (Statutory as well as effective rates) on Aluminium ingots [I.C.T. Item No. 66(1)] was 20 per cent *ad valorem* and the same on Sheets, Circles and Foils [I.C.T. Item No. 66 (a)], was 27 per cent *ad valorem*. The manufacturers of A.C.S.R. and A.A.C. were given a concessional duty of 15 per cent *ad valorem* on imports of E.C. Grade ingots, bars and billets. The Government Resolution of 10th December 1971 on the Commission's Report (1971) contained Government's decision that, after the withdrawal of protective rates

of duty, the effective rates of revenue duty should 'for the present' be maintained at the same level as the effective rates of the then existing protective duty. So, when by the Indian Tariff (Amendment) Act, 1971 Government increased the rates of Customs (Revenue) Duty (Statutory) on I.C.T. Items 66 (1) and 66 (a) to 40 per cent *ad valorem*, the effective rates were maintained at the then prevailing levels by issue of a Notification on 1-1-1973. With effect from 1-3-1973 Auxiliary duty of Customs at 5 per cent *ad valorem* is leviable on these items. In the budget proposals for 1974-75, this levy has been continued. Government have, however, exempted imported aluminium from countervailing duty to the extent of auxiliary duty of excise with effect from 1st April, 1974. The relevant extracts from the First Schedule to the Indian Tariff Act, 1934 are given in Appendix V-A.

7.2. Central Excise Duty :

7.2.1. In 1971, a basic Excise duty of 25 per cent *ad valorem* was levied on Aluminium and its products except Aluminium Foils on which the rate of duty was 20 per cent *ad valorem*. In addition, a special excise duty equal to 20 per cent of basic duty and regulatory duty at 20 per cent of basic duty were also leviable. With effect from 1st March 1972 the special duty was merged with basic duty. The basic duty was fixed at 30 per cent *ad valorem* on all items including foils. The rate of regulatory duty was also increased from 20 per cent to 33 1/3% of the basic duty. With effect from 1st March 1973 , Regulatory duty has been replaced by Auxiliary duty of excise and the rate fixed for Aluminium and its products is 33-1/3 per cent of basic duty on all products. In the budget proposals for 1974-75 this levy has been continued. Thus, the current effective rate of excise duty continues to be 40 per cent *ad valorem* on all Aluminium products with some exceptions granted under Notifications issued by the Ministry of Finance. Relevant extracts from the First Schedule to the Central Excise and Salt Act, 1944 are given in Appendix V-B.

7.2.2. Manufacturers of Aluminium and semis as well as consumers have generally complained about the high incidence of Central Excise duty on Aluminium and its products.

Consumers also have stated that but for the excise duty, the controlled prices fixed by Government could be considered reasonable.

8. Profitability of the Industry

A financial analysis of the working of the four manufacturers of primary aluminium for the three years 1970 to 1972 is given in Appendix VI. The profibtability of the given companies, as revealed by the profitability ratios given therein, declined in 1972. The return on total capital employed and profit margin on sales, as measured by two significant ratios *viz.*, gross profits in relation to total capital employed and to sales, declined. The net profit per unit sale and the return on share holders equity and reserves and surplus, as measured by the ratios of net profits to net sales and to net worth also declined. Unitwise, excepting in the case of Indian Aluminium Company, profitability ratios showed a continuous decline in all the remaining three companies. In the case of Indian Aluminium Company, the profitability ratios showed an increase in 1971 over 1970 but decreased in 1972, as compared to 1971. The ratios of corresponding amounts of dividends as percentage of paid up equity capital and of net worth for the industry were lower in 1972 as compared to 1971. The working of two companies (for which published Balance Sheets are available) for the latest year (1973) also indicates the same declining trend.

9. Cost of production

9.1. A break-up of the ex-works costs of Aluminium Ingots for the year 1972 as furnished by the manufacturers is given in Appendix VII. The ex-works costs of production reported for 1970 and 1972 are as follows :

(Rs. per tonne)

Sl. No.	Name of the Company	1970	1972	Increase (%)
1	INDALCO	3,583	2,954	(—)18
2	HINDALCO	3,394	3,809	12
3	MALCO	3,746	3,655	(—)2
4	ALCOP	4,749	6,118	29

Indian Aluminium Company has reported lower cost of production by 18 per cent over the two-year period. The decrease is in all the elements of cost of production, namely, raw materials, power, conversion charges and depreciation. On the other hand, Hindustan Aluminium Corporation's cost of production has risen by 12 per cent and the increase is in all the elements of cost except depreciation. Madras Aluminium Company has reported marginal reduction in cost by 2 per cent as a result of reduction in all the elements except in raw materials. An increase in the cost of production by as much as 29 per cent has been reported by Aluminium Corporation of India, mainly under power (46 per cent) and other conversion charges (180 per cent). These increases are neutralised to some extent by a reduction under raw materials (17 per cent). This appears to be due to labour unrest in the factory and power cuts during 1972. Government have, however, not changed the ex-factory prices of Aluminium metal since 24th May 1971 but have increased the Central excise duty as indicated in paragraph 7.2.1.

9.2. Aluminium Industry is, at present, not under tariff protection but is deemed to be protected within the meaning of Section 11(a) of the Tariff Commission Act, 1951. The ex-works selling prices of Aluminium and its products are under Government Control and fixed under the provisions of Aluminium (Control) Order, 1970. As this is only a Review of the progress of the industry, and imports of the metal are banned, fair ex-works prices have not been worked out and compared with c.i.f. prices in this Review.

10. Selling Prices

10.1. The ex-factory selling prices of aluminium ingots, sheets and circles and foils were initially brought under control with effect from the 20th March 1970. Subsequently the Working Group under the Bureau of Industrial Costs and Prices examined the cost of production in the industry. Based on the recommendations of the Working Group, Government notified the selling prices of ingots, sheets and circles on an ex-factory cum-central excise duty basis effective from the 24th May 1971. There has been no change in the ex-factory prices of Aluminium

ingots, sheets and circles since that date except for the purpose of compensating the increased incidence of central excise duty. The present controlled prices of Aluminium ingots are as follows :

Grade	Controlled prices (Rs. per tonne)	Remarks
E.C. Grade-1 E.C. Grade-2	5,586	[The ex-factory price of Rs. 3,990 *plus* Central Excise Duty of Rs. 1,596. A premium of Rs. 70 per tonne will apply] for purity of 99.7% and above.
Commercial Grade	5,558	[The ex-factory price of Rs. 3,970 *plus* Central Excise Duty of Rs. 1,588. The two small producers, namely, ALCOP and MALCO are given an Excise duty rebate of 7½% of the price for Commercial Grade only.]

10.2. The manufacturers have stated that the prices fixed on 24th May, 1971 are far below the prices that prevailed during 1967. Further, they have pointed that there have been substantial increases in all factors of production and have complained that even though there is a specific escalation clause in the Price Control Order, no adjustments have been made in the price by the Government for the increase in the costs of inputs.

10.3. Regarding the price fixation formula and the rate of return at 12 per cent INDALCO has commented as follows :—

"(i) the existing formula itself does not take into account debt/equity ratios and as a result, a conservatively managed company with a low debt/equity ratio achieves a rate of return on its shareholders investment at a much lower level than a

company with a high debt/equity ratio. This anomaly is particularly severe in the case of companies with foreign participation who are required to expand their equity when undertaking expansion programmes."

"(ii) under the existing formula the return allowed diminishes as assets are depreciated and finally becomes almost nil. This aspect of the formula discourages companies from making strenuous efforts to improve the efficiency of and to extend the useful life of their assets since no additional return is allowed for these efforts."

"(iii) if the present formula is to be continued, then the rate of return at 12% quantum is designed to give a 9-10% return after tax on shareholders' investment and thereby permit a 7% dividend return to shareholders and the re-investment of operations. However, the underlying assumptions in this calculations are not valid. In the first place, the interest rate on borrowed funds is assumed at 8% while actual current rates vary between 8.5% on debentures and 10-11% on bank loans. Secondly, the tax rate assumption is 55% while the current rate including surcharge is 57.75%. In the third place, the debt/equity ratio assumption is 66/33 while the company's actual ratio is less than 50/50. For these reasons a strictly controlled return of 12% will result in there not being sufficient profit either to provide for reinvestment or even to maintain a reasonable dividend return to shareholder."

10.4. They have also expressed the opinion that rolled products should be decontrolled as return on them is very marginal. They are doubtful whether the market would absorb the output, if the producers raised the prices to any great extent. According to them, the variety of such products and changes in demand require a flexible price policy and as such the normal control imposed by the freedom which buyers exercise in choosing alternative products is adequate.

10.5. ALCOP has complained that while computing controlled selling price, the Government has allowed 12 per cent return on capital employed to provide for annual bonus to employees, intrest, taxes and dividend to shareholders and this return is extremly inadequate to meet the bonus and interest charges. As such, they are of the view that rate of return should be fixed at 20 per cent. According to ALCOP, the nominal rebate of 7½ per cent allowed to them does not meet fully their high cost of power and other raw materials. The Company further requests that a special consideration should be given to them for being the smallest producer of Aluminium and having the extra burden of cost of power and labour etc.

11. Conclusion

11.1. Aluminium Industry generally made satisfactory progress during the first two years of the period under Review. During the year 1973, the industry received a set back due to severe shortage of power which is the most important input for this industry. The capacity utilisation in that year had shaprly declined to 79 per cent from 101 per cent during the previous year. The earlier expansion plans indicated that self-sufficiency in the primary metal could have been achieved by 1972-73. However for a variety of reasons, the commissioning of the new plants was delayed. With the commissioning of the new factories of Bharat Aluminium Company (Public Sector Undertaking) by stages from 1974 onwards and the implementation of the expansion plants of the existing manufacturers, self-sufficiency is now expected to be achieved by 1975-76. The profitability of the industry, has, however, shown a progressive decline.

11.2. The selling prices of aluminium metal and semi-manufactures have remained under strict Government Control. No change in the prices has been made since 24th May, 1971 although the manufacturers are reported to have represented to the Government for upward revision on account of increases in the costs of inputs. The industry is at present in a fluid state. The Aluminium Industry is considered protected within the meaning of Section 11(a) of the Tariff Commission Act, 1951 for the period ending 31st December, 1976. Hence, we would be undertaking a detailed

Inquiry regarding tne question of the continuance of protection in early 1976, by which time we hope that stable conditions would pervail and a more objective appraisal of the industry would be possible enabling us to make specific recommendations to the Government.

12. Summary of Conclusions and Recommendations.

12.1. Our conclusions and recommendations are summarised below :—

12.1.1. Aluminium industry generally made satisfactory progress during the two years 1971 and 1972. During the year 1973, the industry received a set back due to severe shortage of power which is the most imporant input for this industry.

[*Paragraph* 11.1]

12.1.2. It is hoped that the proposed legislation for collection of adequate data for small scale sector which would help objective evaluation of its performance would be speedily enacted.

[*Paragraph* 2.6.4].

12.1.3. For the reasons mentioned in paragraph 4.9.3 it is considered desirable that the primary aluminium units which may propose to augment their power supply by installing their won generating sets should be permitted to do so, at least as a stand by.

[*Paragraph* 4.9.3]

12.1.4. The Aluminium Industry is at present in a fluid state. A detailed Inquiry regarding the question of the continuance of protection to the Industry would be undertaken in early 1976, by which time it is hoped that stable conditions would prevail and a more objective appraisal of the industry would be possible enabling specific recommendations being made to the Government.

[*Paragraph* 11.2]

13. Acknowledgements

We wish to thank the manufacturers consumers, raw material suppliers as well as the concerned Government Departments who furnished us with information in connection with this Review.

D. B. ANAND,
Chairman.

PRAMOD SINGH,
Member.

M. B. PATEKAR,
Member.

S. S. SAXENA,
Secretary

BOMBAY :
May 17, 1974.

[*Vide* paragraph 1.4]

List of firms, bodies and Government Departments to whom the Commission's questionnaires/letters were issued and from whom replies/memoranda were received.

*Indicates those who replied.

£Not interested.

(A). *Producers*:

*1. Indian Aluminium Co. Ltd., 7, Meddleton Street, Calcutta-16.

*2. Aluminium Corporation of India, 7, Council House Street, Calcutta-1.

*3. Hindustan Aluminium Corporation Ltd., P.O. Renukoot, Mirzapur, (U.P.).

*4. Madras Aluminium Co. Ltd., Opp. Lavalakshmi Race Course, Coimbatore-18.

*5. Indian Foils, G.P.O. Box No. 2381, 4, Mangoe Lane, Calcutta-1.

6. M/s. Mahesh Metal Works, Mandavaganj Keshangreh (Rajasthan).

*7. Rashtriya Metal Industries, Andheri Kurla Road, P.O. J.B. Nagar, Bombay-59.

£8. Mysore Premier Metal Factory, 127, Mint Street, P.B. No. 1674, Madras-1.

*9 Popular Metal-Works & Rolling Mills, Sion, Bombay-22.

£10. Kamani Metals Works, L.B.S. Marg, Bombay-70

*11. Prakash Metal Industries, Jagadhri, Haryana.

*12. M/s. Bralco Industries Pvt. Ltd., Gupta Mills Estate, Darukhana, Reay Road, P.B. No. 6215, Bombay-10.

(B) *Prospective Producers*:

*Bharat Aluminium Co. Ltd., F-41, N.D.S.E. Part-I, Ring Road, New Delhi.

(C) *Producers Associations*:

*1. The All India Manufacturers' Organisation, Co-operative Ins. Building, Sir Pherozeshah Mehta Road, Bombay-1.

2. The Federation of Associations of Small Industries of India, Fort Chambers, 67-71 Tamarind Lane, Bombay-1.

3. The Indian Non-Ferrous Metals Manufacturers' Association, India Exchange Place, Calcutta-1.

(D) *Consumers* :

1. Aluminium Hindustan Pvt. Ltd., 4, Mango Lane, (7th Floor) Calcutta-1.
2. Alcan Asia Ltd., 41, Chowranghee Road, Calcutta-16.
*3. Jeevanlal (1929) Ltd., Crown Aluminium House, 23, Brabourne Road, Calcutta-1.
*4. Aluminium Industries Ltd., 1, Ceramic Factory Road, Kundara (Kerala).
*5. Larsen & Toubro Ltd., Powai Works, Saki-Vihar Road, P.O. Box No. 8901, Bombay-72.
*6. Godfrey Philips India Ltd., Chakala, Andheri, Bombay-58.
*7. Golden Tobacco Co. Ltd., Tobacco House, Vile Parle, Bombay-56.
*8. Lipton (India) Ltd., 9, Western Street, Calcutta-13.
*9. Zenith Tin Works Pvt. Ltd., Clerk Road, Mahalaxmi, Bombay-34.
*10. India Piston (Pvt.) Ltd., Huzur Gardens, Sembiam, Madras-11.
*11. M/s. India Smelting & Refining Co. Ltd., L.B. Shastri Marg, Bhandup, Bombay-400-078.
*12. M/s. Hindustan Brown Boveri Ltd., Brown Boveri House, 264, 65, Dr. A. B. Road, Bombay-400-025.
*13. M/s. Aluminium Cables & Conductors (U.P.) Pvt. Ltd., 2A, Shakespear Sarani, Calcutta-16.
*14. M/s. Anam Electrical Mfg. Co., Kadiyan, Dist. East Godavari, (A.P.).
15. M/s. Electrical Manufacturing Co. Ltd., 136, Jessore Road, Calcutta-15.
16. M/s. Indian Aluminium Cables Ltd., 21-A, Himalaya House, Kasturba Gandhi Marg, New Delhi-1.
17. M/s. Indian Cable Co. Ltd., 9, Hora Street, Calcutta-1.
18. M/s. Jaipur Metals & Electricals Ltd., Jaipur-6, Rajasthan.
*19. M/s. National Insulated Cable Co. of India Ltd., NICCO House, Jone Street, Calcutta-1.
*20. M/s. Power Cables Pvt. Ltd., 24, Brelvi Sayed Abdulla Road, P.B. No. 1522, Bombay.
*21. M/s. Assam Conductors & Tubes P.O. Bamunimaidan, Gauhati-21 (Assam).
*22. M/s. Carter Wallace Ltd., Ruadeourem, Panji (Goa).
*23. M/s. Devidayal Electronics & Wires Ltd., M/s. Devidayal Cable Industries Ltd., Gupta Mills Estate, Darukhana, Ray Road Bombay-400-010.
24. M/s. Jayan Metal Mfg. Co., P. B. No. 7009 16, Sayani Road, Bombay-400-025.

25. Emmo Metals Pvt. Ltd., P.B. No. 7660, 147, Government of India Estate, Kandivli, West Bombay.

*26. M/s. Amritlal Hanjivandas & Co., 156, D, Dr. Mascarhas Road, Shroff Wadi, Mazagaon, Bombay-400-010.

27. M/s. Indian Tobacco Co. Ltd., Vargina House, 37, Chowranghee Road, Calcutta-13.

E. *Consumer's Associations :*

1. The Federation of Electricity Undertakings of India, Transport House, BEST Undertaking, Bhagatsingh Road, Bombay-1.

2. The Indian Electrical Manufacturers' Association, (Western Region), 35, Himgiri, Peddar Road, Bombay-26.

3. The Indian Drug Manufacturers' Association, Sujat Mansion, Andheri West, Bombay-58.

4. The Organisation of Pharmaceutical Producers of India, Cook's Building, Dr. Dadabhoy Naoraoji Road, Bombay-1.

5. The Indian Pharmaceutical Association, 60/1, Chowringhee Road, Calcutta-20.

6. The Fair Trade Practices Association, C/o, Indian Merchants' Chamber, 76, Veer Nariman Road, Churchgate, Bombay-20.

7. The Consumer Guidance Society, Maneckji Wadia Building, 127, M.G. Road, Bombay-1.

F. *Raw Material Suppliers :*

*1. M/s. The Phosphate Co. Ltd., 14, Netaji Subhash Road, Calcutta.

*2. M/s. The Fertilizers & Chemicals Travancore Ltd., Udyogmandal, P.O. Alwaye (Kerala).

*3. M/s. Adarsh Chemicals & Fertilizers Ltd., P.O. Udhana, Dist. Surat (Gujarat).

*4. M/s. Navin Flourine Industries, Chemical Division, Mafatlal Fine Spg. & Mfg. Co. Ltd., Mafatlal House, Backbay Reclamation, P.O. Box No. 10037, Bombay-20.

*5. M/s. India Carbon Ltd., Temple Chambers, 6, Old Post Office Street, Calcutta-1.

*6. M/s. Hindustan Steel Ltd., P.O. Hindoo, Ranchi-2 (Bihar).

G. (a) *Government Departments :*

*1. The Director General of Technical Development, (Non-Ferrous Industries Directorate), Udyog Bhavan, Maulana Azad Road, New Delhi.

*2. The Secretary to the Government of India, Ministry of Steel and Mines Department of Mines, Shastri Bhavan, New Delhi.

*3. Development Commissioner, Small Scale Industries, Nariman Bhavan, Maulana Aazad Road, New Delhi-11.

*4. The Controller, Indian Bureau of Mines, Nagpur.

*5. Director General, Geological Survey of India, 27, Chowringhee Road, Calcutta-13.

*6. The Collector of Central Excise, P.B. No. 11078, Bombay-20.

*7. The Collector of Customs, New Custom House, Ballard Estate, Bombay-1.

*8. The Director, Central Water and Power Commission, Bikaner House, New Delhi.

9. Collector of Customs, Cochin.

10. Collector of Customs, Calcutta.

*11. Collector of Customs, Kandla.

12. Collector of Customs, Madras.

*13. Director General of Commercial Intelligence and Statistics, 1, Council House Street, Calcutta-1.

*14. Indian Standards Institution, Manak Bhavan, 9, Bahadur Shah Zaffar Marg, New Delhi-1.

15. Minerals & Metals Trading Corpn. of India Ltd., P.O. Box 493, Express Bldg., Bahadur Shah Zaffar Marg, New Delhi.

G (*b*) *State Governments* :

1. The Chief Secretary, Government of Andhra Pradesh, Hyderabad.

2. The Chief Secretary, Government of Assam, Shillong.

3. The Chief Secretary, Government of Bihar, Patna.

4. The Chief Secretary, Government of West Bengal, Calcutta.

*5. The Chief Secretary, Government of Gujarat, Ahmedabad.

6. The Chief Secretary, Government of Kerala, Trivandrum.

7. The Chief Secretary, Government of Jammu & Kashmir, Srinagar.

*8. The Chief Secretary, Government of Madhya Pradesh, Bhopal.

9. The Chief Secretary, Government of Tamil Nadu, Madras.

10. The Secretary to the Government of Maharashtra, Industries and Labour Department, Sachivalaya, Bombay-32.

*11. The Chief Secretary, Government of Orissa, Bhubaneshwar.

12. The Chief Secretary, Government of Punjab, Chandigarh.

13. The Chief Secretary, Government of Rajasthan, Jaipur.

14. The Chief Secretary, Government of Uttar Pradesh, Lucknow.

15. The Chief Secretary, Delhi Administration, Delhi.

16. The Chief Secretary, Government of Himachal Pradesh, Simla.

*17. The Chief Secretary Govt. of Karnataka, Bangalore.

APPENDIX II

[*Vide* paragraph 2.5]

World Production of Aluminium Metal

(In Thousands of Metric Tons)

Country	1970	1971	1972
Europe	2,025	2,286	2,491
Africa	165	191	234
Asia			
Bahrain	..	10	75
India	161	178	179
Iran	..	..	7
Japan	728	887	1,014
Formosa	27	27	32
South Korea	17	17	18
TOTAL	933	1,119	1,325
America :			
Canada	972	1,017	918
U.S.A.	3,607	3,561	3,739
Brazil	58	81	81
Mexico	34	40	45
Surinam	55	54	56
Venezuela	23	22	24
TOTAL	4,749	4,775	4,863
Australia	206	246	293
Other Countries	2,143	2,258	2,336
TOTAL	10,221	10,875	11,542

Source : 'World Bureau of Metal Statistics' as reproduced in The Eastern Metals Review, issue dated 3-9-73.

APPENDIX III

[Vide paragraph 2.72]

Installed capacity and Production of Aluminium Sheets Circles and Strips

Sl. No.	Name of the Producer	Installed Capacity			Production during		
		1972	1973	1970	1971	1972	1973
1	INDALCO	18,000	29,500	19,092	20,516	25,187	31,494
2	ALCOP	4,400	4,400	2,524	2,818	3,135	1,950
3	HINDALCO	20,000	20,000	15,922	17,077	17 670	17,425
	SUB-TOTAL (i) .	42,400	53,900	37,538	40,529	51,245	50,869
4	Bralco Industries (P) Ltd. . . .	2,400	2,400	1,226	1,928	568	523
5	Metal Rolling Works P. Ltd. . .	N.A.	2,532	1,627	1,981	1,968	1,747
6	Popular Metal Works and Rolling Mills	600	600	553	360	457	482
7	Rashtriya Metal Industries . .	1,500	N.A.	12	10	289	N.A.
8	Hoosieni Metal Rolling Mills . .	N.A.	N.A.	336	407	764	N.

9	Shri Mahesh Metal Works . .	N.A.	N.A.	9	2	4	N.A.
10	Agarwal Metal Works P. Ltd. . .	N.A.	N.A.	205	254	381	N.A.
11	N. M. Metal Industries . . .	N.A.	N.A.	558	792	764	N.A.
12	Shibu Metal Works, Jagadhri . .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
13	Niranlala Metal Works . .	N.A.	N.A.	..	..	..	N.A.
14	Prakash Metal Industries . .	N.A.	350	195	211	239	N.A.
15	J. B. Metal Industries . .	..	N.A.	33	7	7	N.A.
	SUB-TOTAL (ii)	4,500	5,882	4,754	5,047	5,439	2,752
	TOTAL (i) AND (ii) .	46,960	59,782	42,292	45,576	56,680	53,621

APPENDIX IV

[*Vide* paragraph 4.2.1]

Particulars of Bauxite Deposits

(Million Tonnes)

State	Measured		Indicated		Inferred		TOTAL	
	1971	1973	1971	1973	1971	1973	1971	1973
1. Andhra Pradesh	..	..	..	5.57	..	..	..	5.57
2. Bihar	12.54	12.54	10.80	13.60	7.90	8.35	31.24	34.49
3. Goa	2.74	2.75	4.42	4.42	..	..	7.17	7.17
4. Gujarat	21.65	41.65	..	..	0.40	22.40	22.05	64.05
5. Jammu & Kashmir	..	..	..	..	2.61	2.61	2.61	2.61
6. Kerala	..	..	0.22	0.22	2.72	13.45	2.94	13.67
7. Madhya Pradesh	43.75	67.644	2.37	0.32	6.86	5.999	52.98	73.963
8. Maharashtra	46.57	46.57	1.80	1.798	17.82	17.815	66.19	66.183
9. Mysore	0.69	0.55	13.84	13.61	1.90	1.8	16.43	15.96
10. Orissa	3.53	2.528	...	12.00	11.40	5.90	14.93	20.268
11. Tamil Nadu	8.18	10.268	..	..	..	..	8.18	10.268
12. Uttar Pradesh	2.22	2.22	..	..	..	..	2.22	2.22
	141.88	186.720	33.45	51.538	51.61	78.324	226.943	16.582

Source : Geological Survey of India.

APPENDIX V-A

[*Vide* paragraph 7.1]

Rates of Customs Duty on Aluminium

I.C.T. Item No.	Name of Article	Nature of duty	Standard rate of duty
	Aluminium Manufacturers, the following, namely :—		
66	(a) Plates, sheets, circles, strips and foil, including foil in any form or size ordinarily used as parts and fittings of tea chests.	Revenue	40 per cent *ad valorem*
	(b) Other manufactures, not otherwise specified.	Revenue	60 per cent *ad valorem*
66(1)	Aluminium in any crude form, including ingots bars, blocks slabs, billets, shots and pellets.	Revenue	40 per cent *ad valorem*

NOTES : (1) The above items are subject to Auxillary duty of Customs at 5 per cent *ad valorem* w.e.f. 1-3-1973.

(2) Under Government of India, Ministry of Finance (Department of Revenue and Insurance), Notification No. 4-Customs, dated the 1st January, 1972, the goods falling under Item No. 66(a) of the First Schedule to the Indian Tariff Act, 1934 (32 of 1934), are exempt from so much of that portion of the duty of Customs leviable thereon which is specified in the said First Schedule as is excess of 274 per cent *ad valorem* and the goods falling under item No. 66(1) of the First Schedule to the Indian Tariff Act, 1934 (32 of 1934) are exempt from so much of that portion of the duty of Customs leviable thereon which is specified in the said First Schedule as is in excess of 20 per cent *ad valorem*.

(3) Under Government of India, Ministry of Finance (Department of Revenue), Notification No. 126-Customs, dated the 20th August, 1965 as subsequently amended by Notifications No. 144-Customs, dated the 31st August, 1965,

No. 105-Customs, dated the 6th June, 1966 and No. 211-Customs, dated the 23rd December, 1966, the goods specified in column 1 of the Table below when imported for the manufacture of aluminium conductor steel reinforced or hard drawn stranded aluminium conductors for over head power transmission purposes are exempt from so much of that portion of the Customs duty leviable thereon which is specified in the First Schedule to the Indian Tariff Act, 1934 as is in excess of that specified in the corresponding entry in column 2 of the said table.

Table

Description of goods	Rate of duty
Electrolytic aluminium wire bars, electrolytic aluminium billets, or electrolytic ingots.	15 per cent *ad valorem*

Provided that the importer, by the execution of a bond in such form and in such sum as may be prescribed by the Assistant Collector of Customs, binds himself to pay, on demand, in respect of such materials including the wastage that occurs during manufacture as are not provide to the satisfaction of the Assistant Collector of Customs to have been used for the aforesaid purpose, an amount equal to the deference between the duty leviable on such materials but for the exemption contained herein and that already paid at the time of importation.

(4) Under Government of India, Ministry of Finance; (Department of Revenue and Insurance Notification (Customs) No. 21/F. No. Bud (Cus)/74 dated 18th March, 1974. Aluminium is exempted from so much of the additional duty which is leviable therein under Section 2A of the Indian Tariff Act, 1934, when imported into India, as is equal to the auxiliary duty of excise leviable on such goods.

2. The amendment by Notification No. 211-Customs, dated the 23rd December, 1966 shall be deemed to have come into force on the 19th November 1966.

APPENDIX V-B

[*Vide* paragraph 7.8.1]

Rates of Central Excise Duty on Aluminium

Central Excise Tariff Item	Description	Tariff rate of duty
27 Aluminium	(a)(i) In any Crude form including ingots, bars, blocks, slabs, billets shots and pillets .	30% *ad valorem*
	(ii) Wire bars, wire rods and castings, not otherwise specified	30% *ad valorem*
	(b) Manufactures, the following, namely, plates, sheets, circles and strips in any form or size not otherwise speicfied .	30% *ad valorem*
	(c) Foils (whether or not embossed, cut to shape, perforated, coated printed or backed with paper or other reinforcing material), of a thickness (excluding any backing) not exceeding 0.15 m.m. . .	30% *ad valorem*
	(d) Pipes and tubes other than extruded pipes and tubes .	30% *ad valorem*
	(e) Extruded shapes and sections including extruded pipes and tubes	30% *ad valorem*
	(f) Containers made of Aluminium	30% *ad valorem*

Explanation.—"Containers" means containers ordinarily intended for packing of goods for sale, including casks, drums, cans, boxes, gas cylinders and pressure containers, whether in assembled or unassembled condition, and containers known commercially as flattended or folded containers.

NOTES:—(1) Auxiliary duty of Excise at 33⅓% of effective basic duty of Excise is leviable w.e.f. 1-3-1973.

(2) Under Government of India, Ministry of Finance (Department of Revenue and Insurance), Notification No. 46/70-Central Excise, dated the 1st March, 1970, as subsequently amended by Notifications No. 74/70. Central Excises, dated the 26th March, 1970, No. 50/71-Central Excises, dated the 8th May, 1971, No. 78/72-Central Excise dated the 17th March, 1972 and No. 115/72-Central Excises dated the 1st April, 1972 aluminium of the description specified in column 3 of the table hereto annexed and falling under sub-item specified in the corresponding entry in column 2 of the said Table of this Item is exempt from so much of the duty of excise leviable thereon as is in excess of the duty specified and subject to the condition laid down in the corresponding entry in column 4 and 5 respectively of the said table :—

Table

Sl. No.	Sub-item No.	Description	Duty	Conditions
1	(b) and (c)	Plates, sheets circles, strips and foils in any form or size.	Nil	If produced in ordnance factories belonging to the Central Government and intended for consumption by the ordnance factories or for supply to the Central Government Departments.
2	(a)	Aluminium in any crude form (including ingots, bars, blocks, slabs, billets, shots and pillets), and castings.	Nil	If manufactured from any of the following materials or a combination thereof, namely : (1) Old aluminium scrap; or (2) (a) Scrap obtained from virgin metal; or (b) virgin aluminium in crude form; or (c) a combination of materials mentioned at (a) and (b) above on which the prescribed amount of duty of excise or the additional duty leviable under Section 2A of the Indian Tariff Act, 1934 (32 of 1934) as the case may be, has already been paid.

Sl. No.	Sub-item No.	Description	Duty	Conditions
3	(a)	Aluminium recovered from dross or skimmings of aluminium.	Nil	
4	(b)	Circles having thickness of and above 0.56 millimetres but not above 1.22 m.m.	Nil	(1) If in the manufacture of circles, aluminium in any crude form made from any of the following materials, or combination thereof are used namely ; (a) old aluminium scrap; or (b) (i) scrap obtained from virgin metal, or (ii) virgin aluminium in any crude form; (iii) a combination of materials mentioned at (i) and (ii) above on which the prescribed amount of duty of excise or the additional duty leviable under Section 2A of the Indian Tariff Act, 1934 (32 of 1934) as the case may be has already been paid. (2) The aluminium circles are manufactured by producers who do not produce virgin aluminium from bauxite or from alumina

				or from both whether in the same factory or in another factory in India.
5	(b) (c) (d) (e) and (f)	Aluminium articles	Appropriate amount of duty chargeable less Rs. 1,065 per metric tonne.	(1) If in the manufacture of aluminium articles, aluminium in any crude form made from any of the following materials or combination thereof are used *viz.* (a) old aluminium scrap; or (b)(i) scrap obtained from virgin metal. or (ii) virgin aluminium in any crude form; or (iii) a combination of materials mentioned at (i) and (ii) above., on which the prescribed amount of duty of excise or the additional duty leviable under Section 2A of the Indian Tariff Act, 1934 (32 of 1934) as the case may be, has already been paid. (2) The aluminium articles are manufactured by producers who do not produce virgin aluminium from bauxite or from alumina or from both, whether in the same factory or in another factory in India.

Sl. No.	Sub-item No.	Description	Duty	Conditions
6	(b)	Aluminium sheets	7.2 per cent *ad valorem*.	If used in the electrolysis process.
7	(d) and (e)	Aluminium pipes having outside diameter of— (i) 5.08 c.m., 7.62 c.m., 10.16 c.m. and wall thickness of 1.27 m.m. (ii) 12.70 c.m. and walls thickness of 1.32 m.m. (iii) 15.24 c.m. and wall thickness of 1.47 m.m.	12 per cent *ad valorem*.	If used solely in sprinkler equipment for agricultural irrigation purposes and the manufacturer of such aluminium pipes produces a certificate from the District Agricultural Officer or any other officer authorised by the State Government to the effect that the pipes are used solely for the aforesaid agricultural purposes.
8	(b)	Circles having thickness of and above 0.56 m.m. but not above 1.22 m.m.	21 per cent *ad valorem*.	..
9	(h)	Circles having thickness of and above 0.56 m.m. but not above 1.22 m.m.	Nil	If in the manufacture of circles, plates, sheets or strips, on which the prescribed amount of duty of excise or the additional duty leviable under Section 2A of the Indian Tariff Act, 1934 (32 of 1934), as the case may be, has already been paid, are used.

(3) Under Government of India, Ministry of Finance (Department of Revenue and Insurance), Notification No. 188/71-Central Excise, dated the 30th October, 1971, Aluminium falling under sub-item (a) and (b) of Item No. 27 of the First Schedule to the Central Excises and Salt Act, 1944 (1 of 1944) is exempt from so much of the duty leviable thereon as is equivalent to the duty calculated on the value specified in column (2) of the Table hereto annexed, subject to the conditions laid down in the corresponding entries in column (3) thereof.

Table

Sl. No.	Value per tonne	Conditions
1	Two thousand and eighty rupees.	If the total clearances of all aluminium falling under Item No. 27 of the said First Schedule by a manufacturer or by any person on behalf of the said manufacturer, from one or more factories during the financial year preceding the financial year in which assessment is made did not exceed 9,000 tonnes.
2	One thousand two hundred and fifty-seven rupees.	If the total clearances of all aluminium falling under Item No. 27 of the said first Schedule by a manufacturer, or by any person on behalf of the said manufacturer, from one or more factories, during the financial year preceding the financial year in which assessment is made exceeded 9,000 tonnes but did not exceed 13,500 tonnes.

Provided that such aluminium is manufactured by its manufacture from bauxite or from alumina or from both.

2. Not withstanding the exemption granted by this notification, the aluminium falling under sub-item (a) or sub-item (b) of Item No. 27 of the said First Schedule shall be deemed to have discharged the liability of payment of full duty calculated on the value determined on the basis of the sale price fixed in pursuance of the Aluminium (Control) Order, 1970 made under Section 3 of the Essential Commodities Act, 1955 (10 of 1955).

(4) Under Government of India, Ministry of Finance (Department of Revenue and Insurance), Notification No. 77/72-Central Excises, dated the 17th March, 1972, Aluminium foils falling under sub-item (c) of Item No. 27 of the First Schedule to the Central Excises and Salt Act, 1944 (1 of 1944), are exempt from so much of the duty of excise leviable thereon as is in excess of twenty four per cent *ad valorem*:

Provided that where any of the aforesaid foils are manufactured from naked or plain, coated, printed embossed or backed foils on which the appropriate duty of excise or the additional duty under Section 2A of Indian Tariff Act, 1934 (32 of 1934), as the case may be, has already been paid then, the foils so manufactured shall also be exempt from so much of the appropriate duty of excise leviable thereon as is equivalent to the duty of excise or the additional duty under Section 2A of the second mentioned Act, as the case may be, which has already been paid in respect of the foils from which they have been manufactured.

(5) Under Government of India, Ministry of Finannce (Department of Revenue and Insurance), Notification No. 155/72-Central Excises, dated the 15th June, 1972, Aluminium foils falling under Item No. 27 of the First Schedule to the Central Excises and Salt Act, 1944 (1 of 1944), and of the description specified in column (2) of the Table hereto annexed are exempt from the whole of the duty of excise leviable thereon, subject to the conditions mentioned in the corresponding entries in column (3) of the aforesaid Table.

Table

Sl. No.	Description	Conditions
1	Aluminium foils—	
	(i) Coated, printed and backed with paper or other reinforcing material; or	If manufactured by a manufacturer, out the aluminium foils, on which the appropriate duty of excise or the additional duty under Section 2A of the Indian Tariff Act, 1934 (32 of 1934) has already been paid and the total quantity of such foils taken for the process of manufacture in one or more of his factories in any financial year, does not exceed five metric tonne.
	(ii) Coated or printed or backed with paper or other reinforcing material.	

Sl. No.	Description	Conditions
	Aluminium foils—	
	(i) merely cut to shape and embossed and perforatedior	If the appropriate duty of excise or the additional duty under Section 2A of the Indian Tariff Act aforesaid, has already been paid in respect of the fails.
	(ii) merely cut to shape orembossed or perforated.	

Explanation.—For the purpose of this notification the weight of five metric tonne specified in column (3) against S. No. 1 of the above Table shall be the net metal weight of the foils, that is to say, the weight of the foils after excluding the weight of the coating or lacquering or backing or reinforcing materials, if any, contained in such foils.

Appendix VI

(*Vide* paragraph 8)

Financial analysis of the primary Aluminium metal manufacturers

(i) *M/S. Indian Aluminium Company Ltd.*

(Rs. in lakhs)

	Year ending 31st December					
	1970		1971		1972	
	Rs.	%	Rs.	%	Rs.	%
1	2	3	4	5	6	7
(A) Capital Funds available						
(i) Paid up Capital	1,241.18	26.70	1,241.30	22.01	1,842.23	28.22
(ii) Reserves & Surplus	1,911.14	..	2,397.32	..	2,034.39	
Less Investment	67.64	..	84.44	..	74.61	.
Reserves used in Activity	1,843.50	36.65	2,312.88	41.01	1,959.78	30.03
(iii) Loans	2,303.13	..	2,632.70	..	3,002.10	..
Less capital works in progress	738.77	..	547.06	..	277.08	..
Total (i to iii)	1,564.36	33.65	2,085.64	36.98	2,725.02	41.75
	4649.04	100.00	5,639.82	100.00	6,527.03	100.00

(B) Capital funds utilised						
(i) Net fixed Assets. . . . . (excluding capital works in progress)	3,457·48	74·37	4,586·37	81·32	4,885·57	74·85
(ii) Working Capital	1,191·56	25·63	1,053·45	18.68	1,641·46	25·15
(C) Capital employed (i to ii) . . .	4,649·04	100.00	5,639·82	100.00	6,527·03	100.00
(D) Sales Realisation	3,539·90	..	3,993·93	..	4,410·51	..
(E) Gross profit	682·56	..	1,052·07	..	1,059·25	..
(F) Net profit	506·13	..	676·52	..	492·53	..
(G) Profitability Ratios						
(i) Gross profit as % of						
(a) Capital employed . . .	14·7	..	18.6	..	16.2	..
(b) Sales	19·3	..	26.3	..	24·0	..
(ii) Net profit as % of						
(a) Sales	14·3	..	16·9	..	11·2	..
(b) Paid up capital . . .	40.8	..	54·5	..	26.7	..
(c) Net worth . . . . (paid up capital and Reserves)	16.04	..	18.6	..	12.7	..
(H) Dividend declared on equity capital (in percentages)	14.0	..	17·0	..	16.5	..

(ii) *Aluminium Corporation of India Ltd.*

(Rs. in lakhs)

	Year ending 31st March					
	1970		1971		1972	
	Rs.	%	Rs.	%	Rs.	%
1	2	3	4	5	6	7
(A) Capital Funds Available						
(i) Paid up Capital . . .	200.00	22.53	200.00	25.84	267.50	32.84
(ii) Reserves and surplus . . .	425.07	..	347.35	..	247.82	..
Less Investiment	0.95	..	0.97	..	0.75	..
Reserves used in activity . .	425.12	47.78	346.38	44.74	247.07	30.33
(iii) Loans	264.77	..	230.23	..	300.06	..
Less capital works in progress .	1.23	..	2.47	..	..	..
	263.54	29.69	227.76	29.42	300.06	36.83
TOTAL (i to iii) . . .	887.66	100.00	774.14	100.00	814.63	100.00
(B) Capital Funds utilised						
(i) Net fixed assets excluding capital works in progress . . .	724.34	81.60	650.17	83.98	687.30	84.36
(ii) Working Capital	163.32	18.40	123.97	16.02	127.33	15.64

(C) Capital employed						
TOTAL (i to ii) . .	887.66	100.00	774.14	100.00	814.63	100.00
(D) Sales Realisation	362.59	..	606.35	..	660.57	..
(E) Gross Profit	24.13	..	(—)38.59	..	(—)8.17	..
(F) Net Profit	2.95	..	(—)60.69	..	(—)33.91	..
(G) Profitability Ratios						
(i) Gross profit as % of						
(a) Capital employed . . .	2.7	..	(—)5.0	.	(—)1.0	..
(b) Sales	6.6	..	(—)6.4	.	(—)1.2	..
(ii) Net profit as % of						
(a) Sales	0.8	..	(—)10.0	.	(—)5.1	..
(b) Paid up capital . . .	1.5	..	(—)30.3	..	(—)12.6	..
(c) Net Worth (Paid up capital +Reserves)	0.5	..	(—)11.1	..	(—)6.6	..
(H) Dividend declared on equity capital (in percentages)	..	..	5.0		..	..

(iii) *M/s. Hindustan Aluminium Corporation Ltd.*

(Rs. in lakhs)

	Year ending 31st December					
	1970		1971		1972	
	Rs.	%	Rs.	%	Rs.	%
1	2	3	4	5	6	7
(A) Capital Funds Available						
(i) Paid up capital . . .	1,303.18	25.38	1,303.18	26.73	1,503.97	29.17
(ii) Reserves & surplus . .	2,617.36	..	2,907.73	..	2,821.38	..
Less Investment . . .	415.35	..	409.21	..	403.87	..
Reserves used in activity . .	2,202.01	42.88	2,498.52	51.25	2,417.51	46.89
(iii) Loans	1,741.00	..	1,449.27	..	1,500.80	..
Less Capital works in progress .	111.48	..	375.47	..	266.50	..
	1,629.52	31.74	1,073.80	22.02	1,234.30	23.94
TOTAL (i to iii) . . .	5,134.71	100.00	4,875.50	100.00	5,155.78	100.00
(B) Capital funds utilised						
(i) Net fixed assets (excluding capital works in progress) . . .	3,413.67	66.48	3,081.11	63.20	3,328.26	64.55
(ii) Working Capital	1,721.04	33.52	1,794.39	36.80	1,827.52	35.45

(C) Capital employed						
TOTAL (i to ii)	5,134.71	100.00	4,875.50	100.00	5,155.78	100.00
(D) Sales Realisation	3,981.55	..	3,727.92	..	3,804.21	..
(E) Gross Profit	1,077.70	..	531.57	..	412.15	..
(F) Net Profit	948.84	..	415.87	..	206.73	..
(G) Profitability Ratios						
(i) Gross Profit as % of						
(a) Capital employed . . .	21.0	..	10.9	..	8.0	..
(b) Sales	27.1	..	14.2	..	18.8	..
(ii) Net profit as % of						
(a) Sales	23.8	..	11.2	..	5.4	..
(b) Paid up capital . . .	72.8	..	31.9	..	13.7	..
(c) Net Worth (Paid up capital + Reserves)	24.2	..	9.9	..	4.8	..
(H) Dividend declared on equity capital (in percentages)	12.5	..	12.5	..	12.5	..

(iv) *M/s. Madras Aluminium Company Ltd.*

(Rs. in lakhs)

	Year ending 31st December					
	1970		1971		1972	
	Rs.	%	Rs.	%	Rs.	%
1	2	3	4	5	6	7
(A) Capital Funds Available						
(i) Paid up capital	598.64	40.55	598.79	34.79	598.88	36.04
(ii) Reserves & Surplus	223.10	..	307.99	..	324.07	..
Less Investment	9.23	..	12.21	..	12.21	..
Reserves used in Activity	213.87	14.49	295.78	17.18	311.86	18.77
(iii) Loans	663.77	..	826.60	..	1,149.23	..
Less capital in progress	..	..	..	..	398.24	..
	663.77	44.96	826.60	48.03	750.99	45.19
TOTAL (i to iii)	1,476.28	100.00	1,721.17	100.00	1,661.75	100.00
(B) Capital Funds utilised						
(i) Net fixed assets excluding capital works in progress	1,106.91	74.98	1,170.25	67.99	954.62	57.45
(ii) Working capital	369.37	25.2	550.92	32.1	707.11	42.55

(C) Capital employed						
TOTAL (i to ii) . .	1,476.28	100.00	1,721.17	100.00	1,661.73	100.00
(D) Sales Realisation	720.71	.	672.66	..	759.88	..
(E) Gross Profit	218.33	..	138.44	..	137.54	..
(F) Net Profit	162.20	..	84.59	..	85.07	..
(G) Profitability Ratios						
(i) Gross profit as % of						
(a) Capital employed . . .	14.8	..	8.0	..	8.3	..
(b) Sales	30.3	..	20.6	..	18.1	..
(ii) Net profit as % of						
(a) Sales	22.5	..	12.6	..	11.2	..
(b) Paid up capital . . .	27.1	..	14.1	..	14.2	..
(c) Net worth (Paid up capital+Reserves)	19.7	..	9.3	..	9.2	..
(H) Dividend declared on equity capital (in percentages)	12.0	.	12.0	..	..	..

APPENDIX VII

[*Vide* paragraph 9.1]

Cost of production of Aluminium

Details	INDALCO		HINDALCO		ALCOP	
	1970	1972	1970	1972	1970	1972-73
(A) Installed capacity (Tonnes)	66,170	76,170	80,000	95,000	9,000	9,000
(B) Production . . (Tonnes)	61,295	78,581	78,191	78,503	8,073	7,832
(C) Utilisation . . (%)	92.6	103	97.07	98.01@	89.07	87
Cost of Production Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(i) Raw Materials . .	2,064	1,947	1,557	1,805.58	2,382	1,991
(ii) Power	445	392	1,011	1,073.59	1,295	1,891
(iii) Other conversion charges .	491	417	352	547.60	661	1,850
(iv) TOTAL	3,000	2,756	2,920	3,426.77	4,338	5,732
(v) Depreciation . .	583	198	474	382.37	411	386
(vi) Total Ex-works Costs .	3,583	2,954	3,394	3,809.14	4,749	6,118

[@Utilisation based on 80,000 tonnes of installed capacity as the presen)o tonnes includes 15,000 tonnes which was completed but could not be commissioned.]

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