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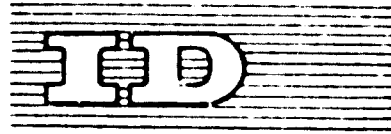
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Development of the Petrochemical Industries in
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DEVELOPMENT OF THE PETROCHEMICAL INDUSTRY
IN BURMA

by

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Burma

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As it was stated in 1964 during the First United Nations Interregional Conference on the Development of Non-Ferrous Industries in Developing Countries held in Teheran, Iran, Burma started establishing petrochemical industries based on natural gas in 1960. Exploratory drilling in 1960. Assessment, both from reserves angle and quality, was completed in 1966 and two separate area production plants each with a capacity of 65,000 tons/annum are being built on east and west banks of river Irrawaddy. Located in Central Burma oil fields area, these places are known as Sa-le and Kyunchaung.

Installation work at Sa-le is nearing completion and production is scheduled to commence during 1970. Initial stage will confine the plant to produce urea only but plans to expand towards production of other nitrogenous fertilizers will be prepared and implemented at later stages. Similarly, the one at Kyunchaung is now entering erection stage and target date to commence production is in 1971. When completed the combined production of 133,000 tons urea will considerably reduce the present import requirements. It is estimated that urea requirement for all agricultural sectors within the country need some 700,000 tons per annum.

Increase in petroleum products requirements within the country continues presently at a pace approximately equal to 7 per cent annually and if not higher this is expected to continue at least for another decade taking into account the plans in the region of industrial development. As a result, the state-owned People's Oil Industry has expanded its exploratory work to cover wide and diversified areas and the results so far obtained are most encouraging. Gas strikes similar to those obtained in Central Burma in 1960 are now found at areas approximately 200 miles away and efforts to ascertain reserves etc. are now in progress. Once established the expansion in industries based on natural gas must of necessity be planned and expedited.

Having 92 per cent plus reserves at all reservoirs so far being tapped the planned industries based on natural gas are at present confined to fertilizer production. But with efforts continuing in the sector for additional discoveries in entirely different areas the position could very well change, and based on many anticipated new discoveries which could include L.P.G. etc. new routes in petrochemicals will be resorted to.

While the role of natural gas as a starting material for petrochemicals

would suffice as mentioned above, Burma also plans another route through naphtha now beginning to appear as a surplus in two oil refineries. As in the case with many developing countries or even developed countries, demand for middle distillates began to show a phenomenal rise during the previous decade thus ending the days when refining patterns at an oil refinery could be kept very near balanced. Thus while motor gasoline requirements worked out to almost 40 per cent on overall petroleum products during 1955, the quantity is now gradually falling to a mere 20 per cent. Projecting further, this figure will drop to around 14 per cent in five years time. Thus some 40,000 tons of naphtha remain as surplus in oil refineries during 1960. Similarly projecting, this quantity will reach 100,000 tons mark in 1973.

The People's Oil Industry is now producing the entire requirements of all major petroleum products, and has plans to continue to do so in the future. Therefore an additional oil refinery of 1 million tons capacity is being planned for commissioning in 1972. Taking this into account the question of naphtha availability becomes established for further work on planning naphtha based petrochemical industries. As a vital initial step the quality assessment of the naphtha is being carried out at laboratories both at home and abroad; the results of this work will of course dictate the type of units and products that will be produced as a start.

While planning such a capital intensive industry interwoven with many other problems e.g. products disposal, know-how and availability of trained personnel, the planning body has taken particular care to ascertain the quantity and types of petrochemical products that may be consumed internally. In doing so the industrial development in all sectors has had to be taken into account. While this work is still continuing it is now almost established that production up to 30,000 tons per annum of ethylene for making polyethylene and PVC should become the basis for initial effort.

As can be seen clearly, this initial effort still leaves much to be planned before a complete petrochemical complex can be made to function. Many by-products/co-products will evidently become available and adequate provisions to make use of such products to maximum economic advantage becomes an immediate necessity. Unlike other commercial concerns where the two industries function separately it is hoped that state ownership of all industries within the country

can prove a useful linkage and at least partially solve this problem. Till such time as complete utilization of naphtha for production of petrochemical intermediates is effected these by products and co-products will be suitably amalgamated into oil refinery product streams.

Burma's effort towards industrial development is mainly to achieve better and higher standard of living for the working people of the country. As plans come into operation with increased production at all sectors, consumption of petrochemical products will increase both as substitutes for conventional products and as additional ones. Projections of demand for the years to come are therefore carried out with emphasis on capacity for internal consumption. Provisions for export will however become another point for consideration.

The planning body of the Government of Burma fully realizes the capital intensive nature of the industry together with requirement for highly skilled technicians and good research facilities. Efforts to make such necessities available are being made both within the country and abroad and any assistance obtained from United Nations through its specialized agencies at this juncture could be made use of effectively. Grants towards establishment of a research centre and training facilities for personnel are few amongst the present technical requirements.

Amongst the wide and diversified range of products that can be obtained from petrochemicals the rate of entry for Burma is expected to be gradual and take the following form:

(a) Nitrogenous Fertilizers

Burma has 12 million acres of arable land available for agricultural products. Use of fertilizers to achieve higher production at this sector is an immediate necessity to raise national income. With good quantities of natural gas already available and additional discoveries continuing, continuous growth in this sector is imminent. As has been stated earlier in this paper, a minimum of two fold expansion to the current yearly production of 138,000 tons will only be ^avery conservative estimate for the coming decade.

(b) Plastics - polyethylene/PVC

Present consumption of such far from saturation point is around 4,000 tons per annum. Capacity to produce end products is around 10,000 tons. With wider usage of this material anticipated in the very near future, indigenous production becomes a necessity. As naphtha is now becoming available at oil refineries to

the extent of 100,000 tons in 1973, initial arrangements to produce 30,000 tons ethylene are being planned.

(c) Synthetic fibres

Quality assessment of the naphtha is still being done. And provided favourable results are obtained, Burma intends to have this branch also incorporated in its plans for developing petrochemical industries. Local production of short and long staple cotton however, does not interfere with planned expansion of fabrics/yarn production from the petrochemical sector. Here again, the present consumption figure is based entirely on imports and unrealistic and too insignificant to be mentioned. Due to its superior quality and other advantages in usage, synthetic fibres could afford better textiles for working people of this country; this fact will again become the basis for consideration when time comes for planning work to be undertaken. Burma has a population of 27 million according to the latest census and the growth rate is estimated at 2 per cent. Based on this figure, a considerable size synthetic fibre production unit may be put up and the problem of surplus disposal will become somewhat secondary.

(d) Aromatic based petrochemicals

Next, to meet growing demands in the agricultural sector for insecticides etc. Burma intends incorporating aromatic based petrochemicals production in its planned development of petrochemical industry.

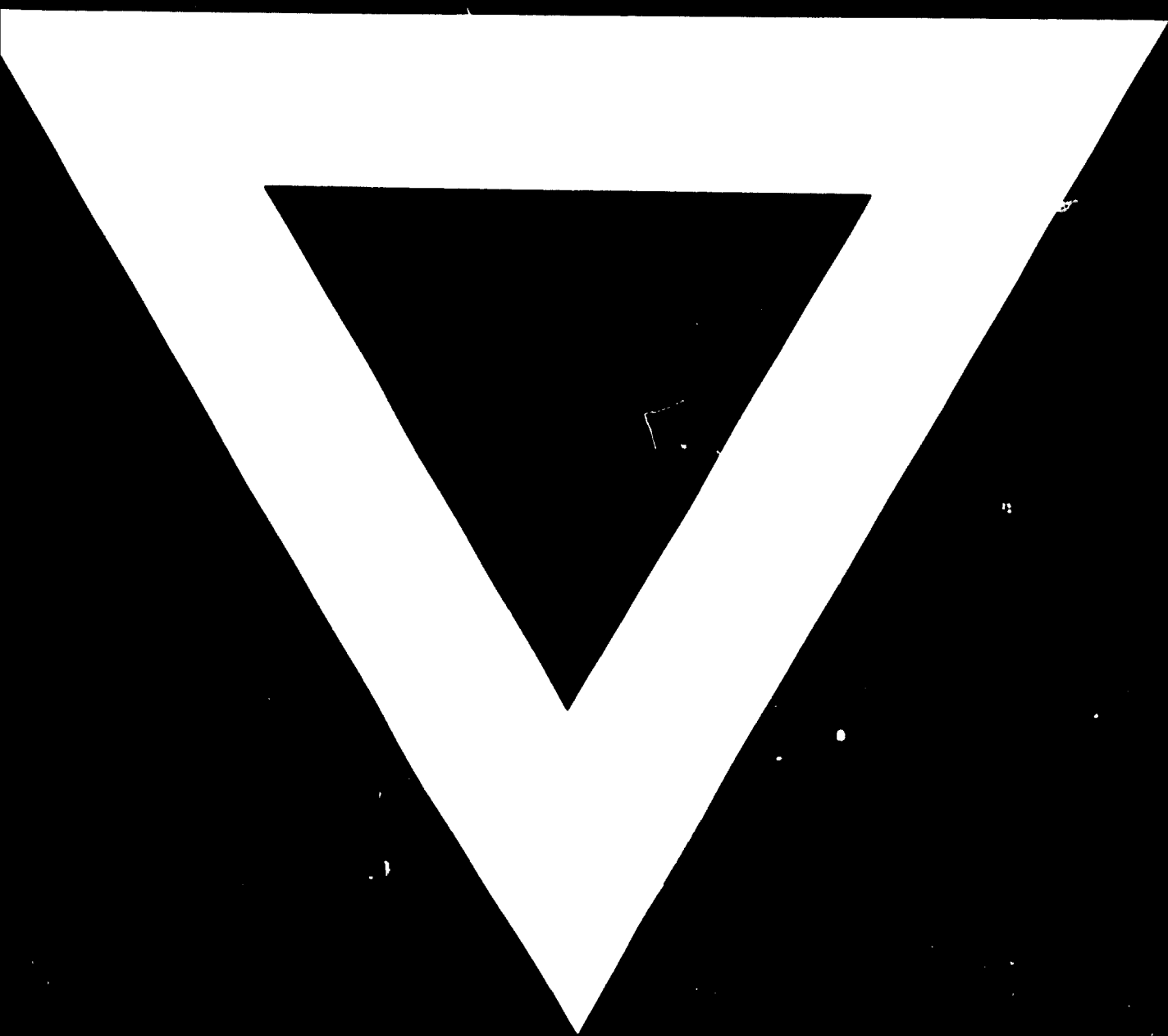
(e) Synthetic rubbers

Though small in quantity, Burma produces natural rubber for export. Only a small percentage is currently used to produce rubber products indigenously. Much time and more work is required in this sector for development and as such, production of synthetic rubbers from petrochemical source will not be so pressing at the moment.

From a brief statement given above, it will be noted that Burma now stands in a good position to extend petrochemicals production from natural gas based fertilizers to naphtha based materials. The industry is still in the planning stage primarily and the implementation already done may be deemed as preliminary. The planning work so far carried out is mainly raw material availability. Much needs to be done to study technological requirements. Rapid growth of the world's petrochemical industry and associated problems encountered by the developing countries as well as by developed countries in the sector of

capital investment, market, technological obsolescence and research will be studied with interest. While making such efforts to gain much needed experience from the conference now planned, Burma will spare no efforts to participate fully and whole heartedly by presenting to those present at the conference her own experiences in these initial periods of planning for development of petrochemical industries.





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