

future usage. UC points out that some counties are already faced with the problem of not having sufficient land to attract industry.

Nitrogen Future

Export demand and domestic surplus by 1956 are possibilities for U. S. Additional capacity needed by 1960

CLUES TO THE NITROGEN MARKET for the next few years can be seen in reports issued shortly after the end of last year. According to the USDA U. S. nitrogen consumption was up about 10.6% in 1953-54 compared with 1952-53. According to the recent Aikman report, world consumption of fertilizer nitrogen last year was up 11.2%. The British Sulphate of Ammonia Federation Ltd. says consumption was up 11.5%. UN-FAO, on the other hand, says there was only a 6% increase in world consumption.

The Aikman figures generally are believed to be the most reliable indicators for the nitrogen industry. Both Aikman and the Sulphate Federation use industry figures. The UN figures are based on official government reports.

As an increasing number of synthetic ammonia plants go into production in the United States, there is speculation on the possibility of a domestic nitrogen surplus looming for 1956, the year when most of the projected plants will be on stream.

On the question of future production and consumption Aikman says that the world, exclusive of the U. S., may face a nitrogen shortage by 1956. Total world production by then will be about 7.7 million tons and 6.5 million tons will be used as fertilizer.

Between now and 1956 the U. S. will expand its productive capacity by about a third to a total of about 3.5 million tons. During this same period the rest of the world will be expanding productive capacity by about 400,000 tons. Estimates of present and future world consumption of nitrogen indicate that if the present rate of increase of consumption is maintained the demand for nitrogen outside the U. S. may exceed the supply in 1956.

For the U. S. it seems quite possible that there will be a surplus of domestic nitrogen in 1956. The original expansion program for the nitrogen industry called for a productive capacity of about

3.5 million tons by 1956. Of this total supply the Department of Commerce estimated about 2.4 million tons would be used in agriculture and the remainder would be used for industrial purposes (900,000 tons) with less than 100 thousand tons scheduled for export.

Foreign trade may provide an additional market of about 150,000 tons of nitrogen for American production in 1955, through a decrease of 100,000 tons in imports from Europe and an increase of about 50,000 tons in exports to the Far East. The U. S. has been a net importer of nitrogen in the past; 1953-54 imports were 340,000 tons and exports were about 90,000 tons.

Assuming the Aikman estimates of a possible short supply of non-American nitrogen in 1956 the export market for American nitrogen products could be better than the original government estimate of less than 100,000 tons.

Crucial point of the export problem may well be ammonium sulfate. The switch to high analysis fertilizer has decreased the market for sulfate in Europe and the U. S. considerably. Principal world market now seems to be the rice areas of the Far East. However, with a generalized oversupply of sulfate it seems likely that European and Japanese sulfate producers will continue to undersell the American product in sulfate consuming areas.

Agriculture is expected to consume about two thirds of the nitrogen production in 1956. An examination of the consumption curve for the U. S. shows that there has been a fairly constant and

steady rate of increase since 1945, roughly 10% per year. If this increased rate can be maintained, then fertilizer consumption of nitrogen should be about 2.4 million tons in 1956-57. A comparison with the world nitrogen consumption curve may indicate the U. S. is now in a period of abnormal consumption increases and perhaps can be expected to slow down at some future point.

If industrial consumption would increase at the same rate as agricultural consumption, then the total production of 1956 could be consumed within the U. S. Industrial consumption of nitrogen in 1953-54 was about 800,000 tons and there seems to be little likelihood that the industrial consumption curve will parallel that of agriculture for the next three years. Estimates of industrial consumption for 1956 range about 800,000 to 900,000 tons. Assuming exports of 100,000 to 150,000 tons in 1956, the U. S. may have a domestic nitrogen surplus of from 150,000 to 300,000 tons, 4 to 8% of capacity.

The surplus of 1956 may well be of short duration however, for if the above nonagricultural figures remain static, and agricultural consumption maintains an increase rate of 10% per year, the surplus nitrogen capacity of 1956 could find an agricultural market in 1957-58.

The high analysis trend of recent years might mean that even in a temporary nitrogen surplus situation, the ammonia plants would sell their production while some sulfate production might be curtailed. If there is no lessening in the nitrogen boom, it is possible that agricul-

