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CIA/RR-CB-61-34

Copy No. _____
15 June 1961

ST/PC

CURRENT SUPPORT BRIEF

FOUR EUROPEAN SATELLITE COUNTRIES PURCHASE
PLASTICS PLANTS FROM THE FREE WORLD

OFFICE OF RESEARCH AND REPORTS

CENTRAL INTELLIGENCE AGENCY

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FOUR EUROPEAN SATELLITE COUNTRIES PURCHASE
PLASTICS PLANTS FROM THE FREE WORLD

In one of the most significant steps to date in the Bloc campaign to catch up with the Free World in chemical production, four European Satellite countries recently contracted to buy \$25 million worth of plastics producing equipment and technology from the United Kingdom. Under the terms of the contract, East Germany, Poland, Czechoslovakia, and Rumania reportedly will each obtain equipment for a plant capable of producing 24 thousand tons of polyethylene plastic per year. If adequate provisions for raw materials have been made the plants should be in full operation by the end of 1964 and will contribute significantly to the attainment of 1965 goals for production of plastics in the Satellite area. The transaction adds to the list of some 100 major contracts for chemical plants, equipment and technology concluded by the USSR and the European Satellite countries with Free World firms in 1958-60.

In April 1961 a consortium formed a year earlier by East Germany, Poland, Czechoslovakia, and Rumania reached the agreement with two British firms to buy equipment and technology for producing polyethylene. 1/ Of the estimated \$25 million provisional value of the contract \$20 million is to go to Simon-Carves Limited for engineering work and equipment and \$5 million to Imperial Chemicals Limited (ICI), the firm which developed and patented the original polyethylene process about 30 years ago. Each country is reported to be buying specialized equipment and help in the construction and initial operation of one 24-thousand ton plant. Construction work is scheduled for completion within three years. 2/

This single transaction represents an important move on the part of the European Satellite countries to implement ambitious plans for expansion of plastics production in the 1961-65 plan period. Plastics production in these four countries is scheduled to rise from an estimated 218,000 tons in 1960, mostly older types of plastics, to roughly 800,000 tons in 1965. Of the 600,000-ton increase, about 80,000 tons or 13 percent is estimated to be for polyethylene, which is not produced commercially in the European Satellites at present. (Table 1) Bulgaria and Hungary also plan to erect polyethylene plants during the period but the requisite technology and equipment reportedly is to be obtained from the USSR rather than from the Free World. 3/

The plans for production of polyethylene in the European Satellites, as well as elsewhere in the Bloc,* are part of a general plan to catch up with the Free World in the plastics field as well as in other areas of chemical production. In the polyethylene field the Bloc is perhaps 10 years behind the West. The first commercial process for making polyethylene was developed before World War II in the

*Soviet production in 1960 is estimated to have been very limited, but plans call for production of about 300,000 tons in 1965. Current plans for producing polyethylene elsewhere in the Sino-Soviet Bloc are unknown.

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United Kingdom by ICI.* By 1939 polyethylene was being produced in the United Kingdom and by 1943 in the United States. 4/ Polyethylene is a versatile plastic with applications ranging from the fabrication of toys and houseware to the manufacture of electric insulating material and piping, (Table 2), and in recent years it has become the most widely produced plastic in the United States. (Table 3) Other important producing countries now include the United Kingdom, France, Italy, West Germany, and Japan. The production of polyethylene is not limited to the developed countries of the Free World. For example, Simon-Carves has built a polyethylene plant in India** and is building plants in Mexico and Yugoslavia. 6/ Meanwhile, Bloc countries have demonstrated interest in polyethylene but native research and development work has lagged. Although polyethylene has many applications in the consumers' goods field (which accounts for well over one half of total United States consumption), a high percentage of Bloc production will probably be used, at least initially, in the production of producers' goods and military end products and in construction.

Although the plants to be erected in East Germany, Poland, Czechoslovakia and Rumania are evidently scheduled for completion by early 1964, full-scale operation probably will hinge on the availability of ethylene, the main starting chemical. In turn, production of ethylene will depend, in part, on imports from the Free World of equipment for producing ethylene and the development of a petrochemical base in the Bloc. Information on progress in establishing these supporting facilities is incomplete. East Germany, however, has purchased two ethylene installations in the Free World to be completed in 1962 or 1963. 7/ Poland is to obtain pyrolysis equipment for an ethylene plant in Czechoslovakia. 8/ East German, Polish, and Czechoslovak production will probably be based wholly or partly on the additional Soviet petroleum which would be available before 1965 through the pipeline from the USSR now under construction. In Rumania propane and propylene obtained from domestic petroleum are to provide the starting materials for ethylene production. 9/

*A high-pressure process. Subsequently, a number of low-pressure processes have been developed, initially in West Germany. The characteristics of high-pressure polyethylene vary somewhat from those of low-pressure polyethylene.

**According to a trade agreement signed in 1960 India will ship polyethylene to Czechoslovakia. 5/

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TABLE 1

Current and Planned Production of Plastics in the
European Satellite Countries

<u>Country</u>	<u>Thousand Metric Tons</u>			
	<u>Total Plastics</u>		<u>Polyethylene</u>	
	<u>1960</u>	<u>1965</u>	<u>1960</u>	<u>1965</u>
European Satellites, Total	233	882	neg.	100
East Germany	93 <u>a/</u>	311	neg. <u>d/</u>	50
Poland	54	199	0	10
Czechoslovakia	58	197	0	10 <u>c/</u>
Rumania	13	95	0	10 <u>c/</u>
Hungary	9 <u>b/</u>	40	0	10 <u>c/</u>
Bulgaria	6	40	0	10

a. 1958.

b. 1959.

c. Estimated.

d. Experimental basis.

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TABLE 2

US Domestic Consumption of Polyethylene
by End Uses, 1960 a/ 10/

	<u>Quantity</u> <u>(Thousand Metric Tons)</u>	<u>Percent</u>
Total	400	100.0
Film and sheeting	158	39.5
Injection molding b/	82	20.4
Blow molded bottles	29	7.4
Other blow molding	7	1.7
Wire and cable insulation	51	12.7
Pipe and extruded shapes (n.e.c.)	26	6.5
Coatings	24	6.1
Miscellaneous	23	5.7

a. Excludes exports.

b. Primarily housewares and toys.

TABLE 3

US Production of Plastics

<u>Year</u>	<u>Thousand Metric Tons</u>		<u>Polyethylene as</u> <u>Percent of</u> <u>Total Plastics</u>
	<u>Total</u> <u>Plastics</u>	<u>Polyethylene</u>	
1948	674 <u>11/</u>	7 <u>12/</u>	1.0
1953	1,295 <u>11/</u>	63 <u>12/</u>	5.0
1958	2,112 <u>11/</u>	392 <u>11/</u>	18.6
1960	2,721 <u>13/</u>	606 <u>11/</u>	22.3

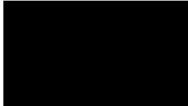
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