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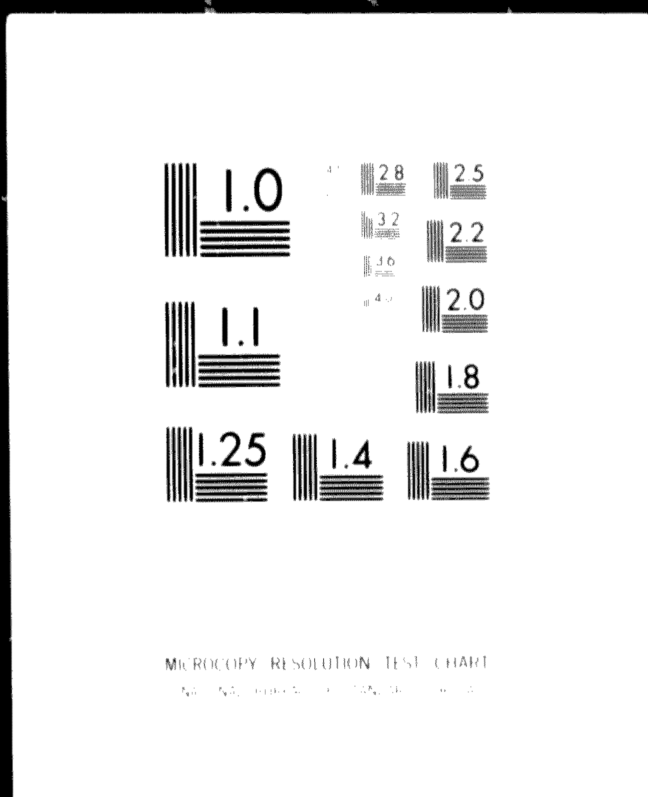

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PROJECT INFORMATION SHEET

United Nations Industrial Development Organization

PHI-08-71

SECOND ASIAN MEETING TO

PROMOTE INDUSTRIAL PROJECTS1/

SINGAPORE, 3-11 November 1971

PETROCHEMICAL COMPLEX

COUNTRY	Philippines
PROJECT	Naphta cracking, with downstream plants manufacturing vinyl chloride monomer, polyethylene and propylene. Total investment: US $200,000,000 (initially $140 million) Capacity: 200,000 MT Ethylene per annum (initially) 300,000 MT Ethylene per annum (final) to be converted into plastics
FOREIGN CONTRIBUTION REQUIRED	- Equity participation - Loan/suppliers credit - Know-how

1/ Sponsored by: The Economic Commission for Asia and the Far East (ECAFE)
The United Nations Industrial Development Organization (UNIDO).

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IMPORTANT NOTICE

The basic purpose of this meeting is to provide an Exchange or Market Place for the initiation of contacts on specific industrial projects between their proponents from the Asian countries and potential suppliers of capital, finance, equipment or know-how, as the case may be, from the industrialized countries.

This Project Information Sheet has been prepared as a basis for such contacts. Its purpose is not to present detailed information about the project but to provide the recipient with an outline sufficient to determine tentative interest in principle. Any further available information on the project will be furnished on request to interested parties at the Meeting.

Experience has shown that industrialists frequently prefer to carry out their own further investigations in detail into projects in which they are interested, but assistance from UNIDO in these matters can be rendered to the Asian country concerned on request.

This Information Sheet contains only the information supplied to UNIDO by the proponent of the Project. UNIDO can therefore take no responsibility for its accuracy.

PETROCHEMICAL COMPLEX

I. INTRODUCTION

- The Project

  The proponent envisages the construction of a petrochemical complex with the following manufacturing facilities: an ethylene (naphta cracker) unit and four downstream plants manufacturing respectively vinyl chloride monomer, low-density polyethylene, high-density polyethylene and propylene and the required auxiliary facilities.

- Foreign Contribution Required

  Equity participation;
  Loan and suppliers credit;
  Know-how.

- Government Attitude

  The project is included in the 4th Investment Priorities Plan, as a preferred area of investment, and is being promoted by the Board of Investment, on behalf of the government which desires minimum participation.

II. COMMERCIAL ASPECTS OF THE PROJECT

- Proposed Plant Capacity

  The proposed capacity of the complex is based on a 300,000 MT. per annum ethylene (naphta cracker) unit, to be associated with its downstream processing plants manufacturing respectively low-density polyethylene, high-density polyethylene, polypropylene and vinyl chloride monomer. The initial construction of the complex is envisioned to start in 1974 with initial operation by 1977 set up at the level of 200,000 MT. per annum ethylene output for the naphta cracker unit, to cater for local demands of that year only. A minor expansion is planned in 1978/79 and the project will reach its full capacity in 1980 as follows:

Product	Initial Operation 1977	Expansion 1978/79	Full Capacity 1980
	Output in 1,000 MT. p.a.		
Ethylene (naphta cracker)	200	250	300
L/D Polyethylene	110	160	175
H/D Polyethylene	40	55	60
Polypropylene	40	52	52
Vinyl chloride monomer	100	115	120

However the complex may start immediately in 1977 with a 300,000 MT. per annum ethylene production, provided that a sufficient export outlet can be tapped for marketing the production surplus during the first years of operation.

During the various stages of operation, by-products will be used as follows to maximize the economy of production:

- Excess propylene will be sold as chemical grade propylene;
- C_5 cuts from the cracker unit will be hydrogen-treated to produce a high-octane pyrolysis gasoline;
- Mixed C_4 cuts will be hydrogen-treated and recycled in the cracker for further ethylene conversion;
- Other gases and the fuel oil produced will be consumed by the complex as fuel.

- Domestic Consumption in 1,000 MT. per annum

	Past Consumption		Projection		
	1968	1969	1977	1978	1980
Low-density polyethylene	14.0	19.2	114.2	131.4	165.0
High-density polyethylene	1.6	2.1	36.0	42.6	56.5
Polypropylene	12.0	n.a.	39.5	43.2	50.7
Vinyl chloride monomer	8.4	9.8	75.7	89.9	118.3

All local demands are met, at present, by imports from Japan, USA and Germany.

- Prices (Based on import prices)

	Proposed in US $/MT.
L/D Polyethylene	350
H/D Polyethylene	460
Polypropylene	477
Vinyl chloride monomer	176

III. PHYSICAL ASPECTS

- Location

  The location of the complex has not been finalized. Areas adjacent to existing refineries are being considered.

- Land

  150 hectares. The necessary land is available.

- Labour

  Estimated labour force required = 1,300 men. Labour is readily available in the Philippines.

- Raw Materials

	Estimated Costs, landed
Naphta, to be imported	US $18.72/MT. tax and duty free[1/]
Chlorine, local	US $69.23/MT.

- Infrastructure

  Depends on the location finally selected for the project. Road, railway and harbour facilities are available.

- Utilities

  Available at the following estimated costs:

	US $
Electric power	0.0108 KWH
Cooling Water	0.0154/1,000 gallons
Process Water	0.0615/cu.m.
F el	0.323/MM.BTU

IV. ECONOMIC ASPECTS

- Importance

  Foreign exchange savings estimated at more than US $42 million p.a.
  Rapid growth of demands for plastics and petrochemicals in the Philippines.
  Prospects for exports are promising, because there is no producer of these products in the region, except in Japan.

1/ US $40.89/MT., if taxes and duties are included.

- Incentives

  Since the project has been included in the 4th Investment Priorities Plan of the government, which took effect 3 May 1971, it will be eligible for investment privileges under the Investment Incentives Act R.A. 5186, i.e. among others, exemption from tax and duty of imported machinery and raw materials, income tax exemption for 5 years, free capital repatriation.

V. FINANCIAL ASPECTS

- Composition of Investment (rough estimates in 1,000 US $)

		1st Stage	Final Stage Aggregate Investment Cost
Pre-investment		7,000	10,000
Assets			
Land		6,000	6,000
Building		12,000	14,000
Machinery		150,000	200,000
Working capital		30,000	46,000
	Total	205,000	276,000

- No financing plan is finalized at this stage. The subject is open for discussion at the Singapore Meeting. The government, however, should have a minimum participation in the project. It is worth noting that, under the present laws and regulations on foreign investment in the Philippines, there is a possibility of the foreign investor having a majority share holding in the project, if so agreed upon by the parties concerned.

VI. OTHER RELEVANT INFORMATION

- Project Presented By

  Board of Investments (BOI)
  6805 Ayala Ave.
  Makati, Rizal
  Philippines

  The Board of Investments is temporarily acting as a local proponent for the project, with the understanding that a more definite organization of the local participants will be set up at a later stage after discussion with the foreign partner.

- <u>Documentation</u>

  BOI Petrochemical Industries Folio and BOI Position Papers on the complex, available for review.

  Additional studies still required: Financing, overall evaluation of the project's technical economic feasibility and commercial profitability, site selection. The project has not yet been submitted to any source of financing, because it has only recently been included in the 4th Investment Priorities Plan of the government (3 May 1971).

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