**Profile No.: 78 NIC Code: 24311**

**HDPE PIPES**

1. **INTRODUCTION**

High Density Polyethylene (HDPE) Pipes are manufactured all over the world by extrusion technique. Sizing methods still vary but the trend is the pressure sizing i.e. introducing air at the pressure of about 0.8 kg/cm2 to 1 kg/cm2 through one of the spider legs of the dies. HDPE Pipes are generally manufactured on single screw extruder.

HDPE Pipes find application in a variety of fields in India and abroad. The most important applications are as follows:

- Drinking water supply line

- Water lines in hilly areas. Here the property of flexibility of HDPE is exploited to the fullest extent

- Irrigation lines

- Industrial effluent disposal lines

- Sewage and gas lines

- Fuel gas line

- Mining Industry

1. **PRODUCTS AND ITS APPLICATION**

 **HDPE pipes are used in various applications such as:**

Sewage pumping mains, Fire mains, Chilled water, Submarine pipe lines, Industrial and chemical applications and HDPE pipes can carry potable water, wastewater, slurries, chemicals, hazardeous wastes, and compressed gases. In fact, polyethylene pipe has a long and distinguished history of service to the gas, oil, mining and other industries. It has the lowest repair frequency per mile of pipe per year compared with all other pressure pipe materials used for urban gas distribution. Polyethylene is strong, extremely tough and very durable.

1. **DESIRED QUALIFICATION FOR PROMOTER**

The Promoter should have preferably a basic degree in plastic engineering/ processing or a degree/ diploma in engineering / or a degree in chemistry. Experience of at least two to three years in plastic industry is desirable.

**4. INDUSTRY OUTLOOK AND TRENDS**

The industrial outlook for this sub segment of plastic processing industry is very bright. Considering the growth of industry such as water supply, adornment treatment, liquid and gaseous chemical products, etc. the demand for HDP pipes has been increasing from these applications, both within the country and abroad. The production trend shows a steady growth of more than 15%. New segments of applications are contributing towards encouraging trends for the industry.

1. **MARKET POTENTIAL AND MARKETING ISSUES, IF ANY**

High Density Polyethylene (HDPE) Pipes are manufactured all over the world by extrusion technique. Sizing methods still vary but the trend is the pressure sizing i.e. introducing air at the pressure of about 0.8 kg/cm2 to 1 kg/cm2 through one of the spider legs of the dies. HDPE Pipes are generally manufactured on single screw extruder.

HDPE Pipes find application in a variety of fields in India and abroad. The most important applications are as follows:

- Drinking water supply line

- Water lines in hilly areas. Here the property of flexibility of HDPE is exploited to the fullest extent

- Irrigation lines

- Industrial effluent disposal lines

- Sewage and gas lines

- Fuel gas line

- Mining Industry

1. **RAW MATERIAL REQUIREMENTS**

HDPE Granules

1. **MANUFACTURING PROCESS**

HDPE granules are fed into the hopper of the extruder which goes into the heated cylinder of the extruder, where the granules melt and are conveyed (pumped) to the die exist. Now the melt passes through the die and takes the shape of the die i.e. circular shape and emerges from the exit of the die. It then passes through the calibrator and is forced to tale the shape of the inside of the calibrator which is round in diameter by the inside air pressure. This melt solidifies and taken round shape in the calibrator, which is cooled by passing chilled water through it continuously.

Now the solid pipe is taken out from the water and is drawn continuously from the die. The speed is adjusted according to the thickness of the pipe required and extruder output. The pipes is either cut into 5 meters length or wound on the winder unit. Generally pipes up to 110 mm diameter can be made on this extruder.

1. **MANPOWER REQUIREMENT**

| **Sr. No.** | **Particulars**  | **Nos.** | **Salary Per Month**  |
| --- | --- | --- | --- |
| 1 | Production Engineer/Manager | 1 | 15000 |
| 2 | Sales Executive | 1 | 10000 |
| 3 | Accountant | 1 | 10000 |
| 4 | Store Keeper | 1 | 8000 |
| 5 | Watchman | 2 | 14000 |
| 6 | Supervisor | 2 | 16000 |
| 7 | Chemist | 1 | 12000 |
| 8 | Skilled Workers | 4 | 32000 |
| 9 | Helpers | 3 | 18000 |
|   |  Total  | 16 | 135000 |

1. **IMPLEMENTATION SCHEDULE**

The estimated time required for implementing the project would be approximately 10-12 months

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Particulars**  | **Time**  |
| 1 | preparation of Project report | Two months |
| 2 | Sanction of loan | Three months |
| 3 | Selection of Site  | One month |
| 4 | Completion of registration and other formalities  | One month |
| 5 | Machinery procurement, erection and Installation | Four months |
| 6 | Trial production and commissioning  | One month |

1. **COST OF PROJECT**

|  |  |  |
| --- | --- | --- |
| **Sr. No**  | **Particulars**  | **Rs. In Lakhs**  |
| 1 | Land & Building  | 35 |
| 2 | Plant & Machinery  | 38.75 |
| 3 | Other Misc. assets | 8.75 |
| 4 | Pre-Operative expenses | 3.5 |
| 5 | Margin for WC | 25.101 |
|   | **Total** | **111.101** |

1. **MEANS OF FINANCE**

| **Sr. No.** | **Particulars** | **Rs. (lakhs)** |
| --- | --- | --- |
| 1 | Promoter's contribution | 33.3303 |
| 2 | Bank Finance | 77.7707 |
| 3 | **Total** | **111.101** |

1. **WORKING CAPITAL CALCULATION**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.**  | **Particulars**  | **Rs. lakhs** | **Stock Period days** | **Promoter Margin** | **Margin Amt.** | **Bank Finance** |
| 1 | Salaries and wages | 1.35 | 30 | 1 | 1.26 | - |
| 2 | Raw material and packaging material | 21.56 | 30 | 0.5 | 10.78 | 10.78 |
| 3 | Utilities | 0.25 | 30 | 0.5 | 0.125 | 0.125 |
| 4 | Debtors | 32.34 | 30 | 0.4 | 12.936 | 19.404 |
|  | Total  | 55.5 |  |  | 25.101 |  |

1. **LIST OF MACHINERY REQUIRED**

|  |  |  |
| --- | --- | --- |
| **Sr. No** | **Particulars**  | **Rs in Lakhs**  |
| 1 | Complete HDPE Pipe Plant  | 30 |
| 2 | Cooling Tower | 2.5 |
| 3 | Scrap Grinder | 1.75 |
| 4 | Testing Equipment & Other Accessories | 4.5 |
|   | Total  | 38.75 |

There is large number of suppliers manufacturing extruder machines which is a key equipment required for the project. HDP pipe plants are manufactured by companies like Klockner Vincor, Remika Plastics, etc.

1. **PROFITABILITY CALCULATIONS**

(Rs. )

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Particulars**  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| (A) |  Sales Realization per annum | **34489728** | **39416832** | **44343936** | **44343936** | **44343936** |
| (B)  | **Cost of Production** |  |  |  |  |  |
| 1 | Raw material per annum | 27095040 | 30965760 | 34836480 | 34836480 | 34836480 |
|  2 | Utilities | 551040 | 629760 | 708480 | 708480 | 708480 |
|  3 | Salaries | 1872000 | 2021760 | 2171520 | 2321280 | 2471040 |
|  4 | Repairs and maintenance | 350000 | 400000 | 450000 | 500000 | 550000 |
|  5 | Selling expenses (3% on sales value) | 1034691.84 | 1182505 | 1330318.08 | 1330318.08 | 1330318.1 |
|  6 | Administrative Expenses (other expenses) | 620000 | 640000 | 660000 | 680000 | 700000 |
|   | Total | **31522771.8** | **35839785** | **40156798.08** | **40376558.08** | **40596318** |
|  (C) | Profit before interest & depreciation | 2966956.16 | 3577047 | 4187137.92 | 3967377.92 | 3747617.9 |
|   | depreciation  | 1106250 | 1106250 | 1106250 | 1106250 | 1106250 |
| **Sr. No.** | **Particulars**  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
|   |  Profit Before term loan and tax  | 1860706.16 | 2470797 | 3080887.92 | 2861127.92 | 2641367.9 |
|   | Interest on term loan (11%) | 824917.5 | 733260 | 611050 | 488840 | 366630 |
|   |  Profit before tax | 1035788.66 | 1737537 | 2469837.92 | 2372287.92 | 2274737.9 |
|   | Tax (30%) | 310736.598 | 521261.1 | 740951.376 | 711686.376 | 682421.38 |
|   | Total Profit  | **725052.062** | **1216276** | **1728886.544** | **1660601.544** | **1592316.5** |

Underlying assumptions for probability calculation are:-

The installed capacity of the plant is assumed at 500 MT per annum. The capacity utilization is taken at 70% i.e. 350 MTs for the first year. The raw material price is assumed at Rs. 78/- per KG. The selling price is taken at Rs.98-100/- per KG. Power cost is taken at Rs.8/- per unit. Interest rate on long term loan is taken at 11%.

1. **BREAKEVEN ANALYSIS**

|  |  |
| --- | --- |
| **Fixed Cost (FC):**  | **Rs. In lakhs** |
| Wages & Salaries  | 18.72 |
| Repairs & Maintenance | 3.5 |
| Depreciation  | 11.06 |
| Admin. & General expenses  | 6.2 |
| Interest on Term Loan  | 8.25 |
| Total  | **39.48** |

Fixed Cost: 39.48

Profit After Tax: 7.25

**BEP = FC x 100/FC+P**

39.48 /46.73 x 70/100 x 100

 **59.14%**

**16. STATUTORY/GOVERNMENT APPROVALS**

There is no specific statutory requirement for plastic industry process. However, MSME registration various taxation related registration and labour law related compliances have to be ensured. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

**17. BACKWARD & FORWARD LINKAGES**

There are no specific backward or forward linkages related techno-economic advantages or synergies for this type of project. However, in future after achieving certain growth entrepreneur may consider backward linkage.

**18.** **TRAINING CENTRE AND COURSES**:

There are number of institutions providing facilities and training courses on production/marketing for the proposed project. These are Central Institute of Plastic Engineering and Technology (CIPET), Indian Institute of Packaging Management (IIPM), Plastic and Rubber Institute (PRI), Indo German Tool Room (IGTR), etc.

Udyamimitra portal  ( link : [www.udyamimitra.in](http://www.udyamimitra.in/) ) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development,  mentoring etc.

Entrepreneurship program helps to run business successfully is also available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates all over India.

**Disclaimer:**

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts.  However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein.  Further the same have been given by way of information only and do not carry any recommendation.