PROJECT PROFILE
ON
PLASTIC BOTTLES

PRODUCT CODE	**:**	**22203 (NIC:2008)**
QUALITY CONTROL & STANDARD:		**AS PER CUSTOMERS SPECIFICATION .**
PRODUCTION CAPACITY	**:**	**1,188 MT**
PROJECT COST	**:**	**Rs.9,81,00,000/-**
PREPARED BY		**MSME – DEVELOPMENT INSTITUTE BAMUNIMAIDAM GUWAHATI-781021 ASSAM**

Introduction:

This project is being set up for manufacturing of Pet/PE/PP Bottles and Closures/Caps. A detailed market analysis by Company's confirms the huge gap between the supply and demand and the demand is growing in leaps and bounds. The Company has already in the process of being tied up with some of the major consumers in the region. The promoters of this project have long standing experience of business in Pardi (Gujarat) / Roorkee (Uttarakand) / Baddi (Himachal Pradesh) and Kolkata (West Bengal). A team of professionals having proven track record of establishing manufacturing plant will be supervising this project. The unit plans to employ qualified technical and commercial personnel with adequate work experience and having appropriate industrial background. The preliminary activity of the project has been identified, engineering specifications completed, quotations are solicited, orders for equipment are in the process of being placed. This project is a GREEN FIELD PROJECT. The Company wishes to make substantial contribution to the industrial growth of the State and the Country.

All necessary technical and statutory clearances are under process. The situation of unit is well connected by Rail and Road to the major / vital destinations of the country. The promoter of the project have their own network to procure Raw materials. A right degree of Plant Automation is blended with manual operation in the proposed manufacturing setup to harness the advantage of low cost skilled manpower available locally. Some strategic business tie-ups with customers in the Market are in pipeline. Well-known and experienced promoters acknowledged for innovative business making. An eco-friendly project.

Land & Building: Has to arrange and build as per Government norms

Civil Construction: The unit has already designed and planned the civil construction. The Civil Construction will commence soon.

Plant & Machinery: The unit has already identified the suppliers; solicited quotations, technical discussions completed and the orders are in the process of being placed.

Electric Power: The unit will receive Power supply and distribution system from dedicated substation of Brahmaputra Industrial Park.

Human Resources: Skilled and unskilled labours are easily available.

Marketing Strategy: The marketing is not the limiting factor for the unit, as the Company is already in the process of being tied up with few major customers.

Transportation: The unit is located at a place, which is well connected by road. The Transportation outward will be done through outside Transporters.

Approval & Licences: All necessary technical and statutory clearances are under process.

MARKET DETAILS

A Short History of the Plastic Shopping Bag:

The word "plastic" entered the modern lexicon in 1909. It was originally coined to describe Bakelite, the first fully synthetic resin. The unique aspect of "plastic" was that when heated it could be molded but it retained its shape when cooled. This property was highly desirable for all sorts of industries - and plastic started on the road to becoming a common and pervasive part of our lives.

The modern plastic bag was not possible until the accidental discovery of the first industrially practical method of polyethylene synthesis in 1933. From 1933 to today, the uses and manufacture of polyethylene have grown exponentially. As much as 4 per cent of the world's petroleum may be converted into ethylene - the basic material of any plastic bag, from the bag you get from the grocers to the bag your dry-cleaning comes in.

Plastic bags became the bag of choice for shoppers beginning in the early 80's, as large supermarket chains Safeway and Kroger began to offer them.

The Indian Perspective:

The plastic industry of India has a big market potentiality and is gradually prospering. This potentiality of the market will surely actuate the entrepreneurs to invest in this industry. Entrepreneurs are trying to provide high quality plastic products, so that it becomes a booming industry.

Some associated industries: The potentiality of plastic industry India propels other associated industries to grow side by side. One of such growing industry is petrochemical industry. Both these industries are reciprocal to each other. The petrochemical industry facilitates the plastic industry to produce plastic products that will meet the domestic demand as well as that of the overseas market.

Finished products of plastic industry India: The plastic processing industry consist of over 30,000 units which are producing a wide range of plastic products through the process of injection moulding, then blow moulding, extrusion, and finally calendaring. Some of the common markets, where plastic products are used are; End user markets: These are the

plastic products basically used for domestic purposes. Some of the end user plastic products are plastic balls, PET/PE/PP Bottles and Closures, caps, plastic baskets, plastic basins, plastic basins, plastic bowls. Some other industries, where plastic materials are used are automotive, building & construction, electrical and electronics, industrial, medical, packaging, transportation etc.

Strategies of plastic industry India: The government of India is trying to set up the economic reforms to elevate and boost the plastic industry by joint venturing, foreign investments.

Prospect of plastic industry India: Plastic industry India symbolizing a promising industry and at the same time creating new employment opportunities for the people of India. The per capita consumption of plastic products in India is growing and is moving towards 8% GDP growth.

The Company is keen for taking the benefit of economic demand of PET/PE/PP Bottles and Closures/Caps in the western region and would target various branded end users of these bottles and closures.

Marketing Strategy

The entire marketing strategy is crafted on the following three variables

Cost

Speed

Quality

These are further elaborated as follows:

Cost:

- The unit proposes to manufacture PET/PE/PP Bottles and Closures/Caps at a very economical cost, since all the cost elements that have profound significance are taken into account through appropriate strategies minimizing their impact on the overall price.
- The cost economy shall be achieved by the following:
    - Modern plant
    - Latest Technology
    - Blend of automation/ manual work
    - Uninterrupted water supply
    - Local customers-low outbound cost

- Low cost skilled work force
- Low Distribution Cost

Speed:

- The need of speed in conducting the business is explained below:
  - Marketing
    - Quick response to enquiries
    - Quick conversion of customer's P.O. to work order.
    - Customer's quality requirement
  - PRODUCTION
    - Just in time Inventory management
    - No power supply shut down
    - On line quality control
    - Two shift operation
  - TRANSPORTATION
    - Local base of customers
    - Transportation by road

Quality:

- The quality in conducting the business operation is as much important as is the final quality of the product. In this regard, good online information systems and clear documentation plays an important role.
- All-important organizational functions such as production, sales & marketing, purchase, quality assurance, packaging, dispatch, commercials shall be described by process flow charts and functional responsibilities.
- Concept and operating procedures based on TOTAL QUALITY MANAGEMENT shall be implemented throughout the organization to harness internal synergy, talents and streamlining the interface of the various connected functions.
  - Marketing system
  - Customer satisfaction
  - Cost + Speed + Quality

Marketing Plan:

- As a part of marketing strategy, the Company would like to have the balanced mixture of various types of consumers and dealers network.
- This unit shall target the new customers in the state and the existing customers, which are already facing supply problem.

The scope of Work

- Plant and Civil Layouts
- Selection of Equipment
- Power, Utilities and Auxiliary Facilities
- Evaluation of Offers
- Implementation Schedule
- Raw Material Availability and Identification
- Man Power, Production Cost and Capital Cost Estimates
- Design and Engineering
- Ordering the Equipment
- Installation & Commissioning

TECHNICAL DETAILS

Manufacturing Process Flow

To manufacture PET/PE/PP Bottles and Closures, stress moulding machines and blow moulding machines are used. The manufacturing process of each product depends on the drawings and specification and as per the items required by the purchaser.

(a) Stress Moulding: The raw materials used in this process are: Polypropylene, HDPE, LLDPE. These raw materials are mixed with colour pigments or master batches. The mixture is then loaded into injection or blow moulding machines and various articles are formed using appropriate moulds.

(b) Injection Blow Moulding: The sequence of events during the injection mould of a plastic part is called the Blow moulding cycle. The cycle begins when the mould closes, followed by the injection of the polymer into the mould cavity. Once the cavity is filled, a holding pressure is maintained to compensate for material shrinkage. In the next step, the screw turns, feeding

the next shot to the front screw. This causes the screw to retract as the next shot is prepared. Once the part is sufficiently cool, the mould opens and the part is ejected.

Quality Assurance

The process of developing the required quality in the manufactured product transcends beyond the routine quality control measures and systems. Towards this, quality is conceptually imagined and built into the practical operations at the following steps.

Quality

A. Pre Order Stage

B. Post Order Stage

C. Process design Stage

D. Finished product testing

E. Packaging and transportation

Needless to mention that quality assurance of a Company is as sustained effort in amalgamating the quality at all the above stages successfully in such a way, that there is a synergy in production, planning, manufacturing and testing- all meeting the customer need.

To achieve a good quality product, the activities start from application engineering. This is a crucial stage to translate the market requirements into a meaningful description.

Quality assurance is an effective culmination of documentation, formats, measurement standards and methods, testing procedures, sampling and maintenance to plant data and records. Above all the environment of the personnel of the organization coupled with the right automation of the process is extremely important.

Quality System:

The pre order quality system basically comprises of formats and documents for making techno commercial offers, ably supported by a detailed application study and a good costing system. The idea of the formalizing a pre-order quality system is to respond to the customer queries with the minimum lapse of the time besides giving adequate product information to the customer. The various pre order bids of different applications over a period of time shall be logged into the computer data for outward response.

The post-order quality system refers to those formats and procedure, which effectively translates a customer's purchase order. Techno Commercial requirements into a meaningful

work order for onward processing by the production, QA, Sales, commercial and other concerned department.

Process Quality:

The system starts with the assessment of the quality required by the customer and the quantity as well as the delivery period. This is translated into a viable production planning, keeping in mind the plant capacity availability.

- All materials will be analyzed for purity and chemistry.
- Only the accepted and lab tested final product is packed in appropriate quantities for shipment to the final customer.
- All the data so generated in the entire process stated above is logged into an online information system (QIS: Quality Information System) and monitored from time to time.
- To carry out the in line process and final product testing, a complete analysis of required parameters of the paper is maintained under appropriate classification.

Process Control

The monitoring of process parameters such as consistency, temperature, and several other variables form the key controlling indicators of the production system. These indicators are continuously monitored through high degree of instruments and analyzed in the lab for the aid of the shop floor personnel in fine-tuning their operations.

Future thrust area:

The Company shall place a string emphasis on 'Total Quality Management' (TQM) in order to bring process orientation amongst its employees rather than just result orientation.

The Company places a great deal of importance to make "QUALITY" a way of living in MSME. This shall enable the Company to conceptualize, develop and install appropriate quality systems in all phases of its operations, ably supported by the right documentation and information systems. These systems shall ultimately benefit the customer.

Environment Control

We have to learn that MSME's thrust for productivity shall be in harmony with its concern for a cleaner environment. Special attention has been given to the development of the plant in

respect to creating an eco-friendly design based on modern technology in all respects, which is for water, air and solid controls in the plant.

The project site is away from forest, wild life sanctuary etc as per the norms laid down by Pollution Control Board. The project site is chosen considering no effect on environment and topography of land. The site is away from city, village, forest, wild life sanctuary, rivers, etc as per the norms laid down by pollution control board. The process adopted is eco-friendly.

Water Control:

- There is no Water requirement for this manufacturing activity.
- All tanks, pits etc. in the unit has already bottomed sealed to avoid underground water pollution due to percolation or seepage.
- The parameters of the discharged water shall conform to the norms laid down by the Assam Pollution Control Board.

Solid Control

The solid wastes in form of scrap from the proposed activity has realizable value will be sold in open market. Thus there is no pollution from the same.

Air Control

The company will install adequate pollution control system to control air pollution.

Sound/Noise pollution

- All the equipment, machineries and instruments are being procured from the reputed manufacturers whose products are manufactured as per the National and International Norms and Standards. Further all are BIS (ISI) marked. As per the above standards and norms, the noise level would be below 70 db, which is the acceptable level to the State PCBs.
- To conclude, there is no pollution envisaged from air, water and solids from the proposed plant.

Project Implementation Schedule

Continuous sequence of activities is taken as the basis for scheduling.

The timely implementation of the project depends on the following factors:

- Finalization of Layouts

- Design of utilities and services
- Placement of Orders
- Arrangement of Government Sanctions and power supply
- Recruitment of personnel.

Financial Detail & Analysis

Cost of the project & means of finance

A	MAJOR COST HEADS OF THE PROJECT	Amount (Rs in lacs)
	Land & Building	250
	Plant & Machinery	570
	Misc Fixed Asset	125
	Furniture & Fixture & Computers etc	10
	Preliminary & Preoperative Expenses	5
	Contingencies	21
	TOTAL 'A' : PROJECT COST	**981**
B	**MEANS OF FINANCE**	**Amount (Rs in lacs)**
	Promoters Contribution (Equity)	631
	Bank Loan	350
	TOTAL 'B' : MEANS OF FINANCE	**981**

Major cost head of the project

A. **Land and Factory Shed & Building:** Rs 250 Lacs

B. **Plant & Machinery**

S.N	DESCRIPTION	No	AMT IN LACS
1	Pet/PE/PP Injection Molding Machines / Dehumidifier / Color Dosing	10	480
2	Mould & Dies	10	90
	TOTAL		570

C. **Miscellaneous Fixed Assets**

S.N	DESCRIPTION	AMT IN LACS
1	Anciliaries & Utilities	100
3	Electrification	20
4	Misc	5
	TOTAL	125

D. Furniture & Fixture:

Sl. No.	Particulars	Rs in Lacs
1	Furniture, Fixture & Office Equipments / Computers etc	10
	TOTAL	**10**

E. Preliminary & Preoperative Expenses

Sl. No.	Particulars	Rs in Lacs
1	Preliminary Expenses	**1.5**
2	Pre-operative Expenses	
	Salary & Travelling before commercial production	2.0
	Power & Fuel before commercial production	1.0
	Administrative & Other Charges	0.5
	Total	5.0

F. Contingencies

Sl. No.	Particulars	Rs in Lacs
1.	The Contingencies has been kept for Plant & Machineries and Misc Fixed Asset @ 3%	21
	Total	**21**

Production Capacity & Utilisation

PARTICULARS	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
Injection Molding Machine / ASB Machine / CAP Machine	10	10	10	10	10	10
Output per hr (Kg)	165	165	165	165	165	165
No of Working hours per shift	12	12	12	12	12	12
No Of Shifts (Per Day)	2	2	2	2	2	2
No. Of Working Days (P.A.)	45	300	300	300	300	300
INSTALLED CAPACITY (MT per annum)						
Pet/PE/PP Bottles and Closures / Cap Etc	178	1188	1188	1188	1188	1188
CAPACITY UTILISATION	70%	80%	90%	90%	90%	90%
ACTUAL PRODUCTION (MT)						
Pet/PE/PP Bottles and Closures / Cap Etc	125	950	1069	1069	1069	1069

Profitability Statement

Rs in Lacs

PARTICULARS	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
CAPACITY UTILISATION	70%	80%	90%	90%	90%	90%

INCOME (NET OF EXCISE)						
SALE	165	1380	1582	1582	1582	1582
TOTAL 'A'	165	1380	1582	1582	1582	1582
COST OF SALES						
RAW MATERIAL	102	795	916	916	916	916
PACKING MATERIAL	7	57	64	64	64	64
CONSUMABLES	3	22	26	27	28	0
POWER & FUEL	18	142	168	168	168	168
SALARIES & WAGES	6	83	91	100	110	121
REPAIRS & MAINTENANCE	3	3	5	5	5	5
TOTAL	138	1102	1271	1281	1292	1275
ADD: OPENING STOCK OF FG	0	12	18	19	19	19
LESS: CLOSING STOCK OF FG	12	18	19	19	19	19
TOTAL 'B'	12	30	37	38	38	38
ADMINISTRATIVE EXP.	2	14	16	16	16	16
SELLING EXPENSES	3	28	32	32	32	32
PREL. EXP W/O	1	1	1	1	1	0
TOTAL 'C'	6	43	49	49	49	48
TOTAL EXPENSES	157	1175	1356	1368	1379	1360
PBDIT (A-B)	9	205	226	215	204	222
INTEREST	15	118	118	118	118	118
PBDT (D-E)	-6	87	108	97	86	104

SALES FORECAST

Rs in Lacs

PARTICULARS	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
ACTUAL PRODUCTION (MT)						
PET/PP/PE Bottles & Closures	125	950	1069	1069	1069	1069
ADD: OPENING STOCK (MT)						
PET/PP/PE Bottles & Closures	0	10	15	15	15	15
LESS: CLOSING STOCK (MT)						
PET/PP/PE Bottles & Closures	10	15	15	15	15	15
SALE QUANTITY (MT)						
PET/PP/PE Bottles & Closures	115	945	1069	1069	1069	1069
SALE RATE(Rs per MT)						
PET/PP/PE Bottles & Closures	144000	146000	148000	148000	148000	148000
SALE AMOUNT (Rs in Lacs)-(Net of Excise)						
PET/PP/PE Bottles & Closures	165	1380	1582	1582	1582	1582
	165	1380	1582	1582	1582	1582

Raw Material

Name of Raw Material: PET/PE/PP Bottles and Closures
Pet /PE/PP Granules and Master batches etc: 98% yield
Installed Capacity: 1,188 MT per annum

Raw material required for installed capacity of plant

Raw Material	Plant Capacity (%)	Production capacity	Quantity of raw material	Average rate per MT	Amount (Rs in Lacs)
Pet /PE/PP Granules and Master batches etc	100%	1000	1020	80	816

Raw material & packing material consumption: PRODUCTWISE - YEAR WISE

PARTICULARS	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
INSTALLED CAPACITY (MT per annum)						
PET/PP/PE Bottles & Closures	297	1188	1188	1188	1188	1188
CAPACITY UTILISATION	70%	80%	90%	90%	90%	90%
ACTUAL PRODUCTION (MT)						
PET/PP/PE Bottles & Closures	208	950	1069	1069	1069	1069
RAW MATERIAL QUANTITY (MT)						
Pet /PE/PP Granules and Master batches etc	212	970	1091	1091	1091	1091
RAW MATRIAL RATE (Rs) Per MT						
Pet /PE/PP Granules and Master batches etc	99000	100000	102000	102000	102000	102000
RAW MATERIAL AMOUNT (Rs in Lacs)						
Pet /PE/PP Granules and Master batches etc	210	970	1113	1113	1113	1113
	210	**970**	**1113**	**1113**	**1113**	**1113**
PACKING MATERIAL - APPROX RS.5.50 PER KG & INCREASE IN SUBSEQUEMT YEARS						
RAW MATERIAL AMOUNT (Rs in Lacs)	11	57	64	64	64	64

Power & Fuel:

Particulars	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
INSTALLED CAPACITY (MT per annum)						
PET/PP/PE Bottles & Closures	178	1188	1188	1188	1188	1188
ACTUAL PRODUCTION (MT)						
Pet /PE/PP Bottles and Closures	125	950	1069	1069	1069	1069
POWER REQ PER MT (UNITS)	2995	2995	2995	2995	2995	2995
POWER REQUIREMENT (Units in Lacs)	4	28	32	32	32	32
POWER RATE / UNIT (Rs)	4.75	5	5.25	5.25	5.25	5.25
TOTAL POWER & FUEL (Rs in Lacs)	18	142	168	168	168	168

Consumables:

Particulars	1st Year	2nd Year	3rd Year	4th Year	5th Year
ACTUAL PRODUCTION (MT)					
PET/PP/PE Bottles & Closures	125	950	1069	1069	1069
NO. OF WORKING DAYS (P.A.)	45	300	300	300	300
NO OF SHIFTS (PER DAY)	2	2	2	2	2
CAPACITY UTILISATION	70%	80%	90%	90%	90%
CONSUMABLES PER '000 kg (Rs)	2250	2350	2450	2550	2650
CONSUMABLES (Rs in Lacs)	3	22	26	27	28
TOTAL	3	22	26	27	28

LIST OF CONSUMABLES

Rollers	Hand gloves	Oxygen
Cotton Clothes	Bearings	Nuts & Bolts
Cutting oil	Spares	Other Consumables

The Consumables Cost has been increased by 5% every year in subsequent years.

Human Resource Cost

A. TECHNICAL & PRODUCTION STAFF

(Rs in Lacs)

SL. No.	Particulars	No. of Person	Cost per month (Rs)	Amount per annum
1	Works Manager	1	25,000	3.00
2	Electrical Engineer	1	12,000	1.44
3	Operator Injection Moulding Machine	10	8,500	10.20
4	Supervisor	2	7,000	1.68
5	Helper	4	6,000	2.88
			Total	19.20
	Add: Perks @ 10.0%			1.92
			Grand Total A	21.12

B. ADMINISTRATVE & COMMERCIAL STAFF

(Rs in Lacs)

SL. No.	Particulars	No. of Person	Cost per month (Rs)	Amount per annum
1	Accounts Manager	1	15,000	1.80
2	Purchase Manager	1	15,000	1.80
3	Marketing Manager	1	10,000	1.20
4	Assistants / Clerks	1	5,000	0.60
5	Security Officer	2	5,000	1.20
			Total	6.60
	Add: Perks @ 10%			0.66
			Grand Total B	7.26

C. LABOUR

(Rs in Lacs)

SL. No.	Particulars	No. of Person	Cost per month (Rs)	Amount per annum
1	Skilled Labour	10	6,000	7.20
2	Unskilled Labour	26	4,000	12.48
			Total	19.68
	Add: Perks @ 10%			1.97
			Grand Total C	21.65

The Man Power Cost has been increased by 5% every year in subsequent years.

TOTAL MANPOWER COST (A+B+C): Rs 50.03 lacs

Administrative & Other Expenses

NATURE OF EXPENSES	AMOUNT (Rs in Lacs)
Postage & Courier Charges	0.25
Telephone Expenses	1.25
Travelling Expenses	3.00
Bank Commission & Charges	0.25
Insurance Charges	1.50
Vehicle Running & Maintenance Expenses	1.15
Legal & Professional Charges	2.50
Staff Welfare Expenses	0.25
Rates & Taxes	0.50
Conveyance Expenses	2.00
Printing & Stationary	0.40
Miscellaneous Expenses	0.50
Administrative Office Expenses	0.25
TOTAL ADMINISTRATIVE EXPENSES	**13.80**

Selling Expenses: The Selling Expenses each have been estimated to 2% of the Sales Value

Machinery Suppliers:

1. ASB International Private Limited, Chennai, Tamil Nadu
2. Ingersoll Rand India Limited, Gurgaon, Haryana
3. ACS Chillers, Hyderabad, Telangana
4. Dhanesh Industries, Ahmedabad, Gujarat; for raw material

5. Indorama Synthetics (India) Limited, Gurgaon, Haryana, for raw material