

PROJECT REPORT

Of

HDPE BUCKETS

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding HDPE buckets Manufacturing unit.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]



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PROJECT AT GLANCE

1 Name of Proprietor/Director	XXXXXXXXXX
2 Firm Name	XXXXXXXXXX
3 Registered Address	XXXXXXXXXX
4 Nature of Activity	XXXXXXXXXX
5 Category of Applicant	XXXXXXXXXX
6 Location of Unit	XXXXXXXXXX
7 Cost of Project	24.40 Rs. In Lakhs
8 Means of Finance	
i) Own Contribution	2.44 Rs. In Lakhs
ii) Term Loan	17.01 Rs. In Lakhs
iii) Working Capital	4.95 Rs. In Lakhs
9 Debt Service Coverage Ratio	2.73
10 Break Even Point	37%
11 Power Requirement	30 KW
12 Employment	10 Persons

13 Major Raw Materials HDPE granules, galvanized steel wire, recycled plastic, colors, chemicals, handle grips & packing material

14 Details of Cost of Project & Means of Finance

Cost of Project	Amount in Lacs
Particulars	Amount
Land and building	Owned/Leased
Plant & Machinery	17.40
Furniture & Fixture	-
Other Misc Assets	1.50
Working Capital Requirement	5.50
Total	24.40
Means of Finance	
Particulars	Amount
Own Contribution	2.44
Term Loan	17.01
Working capital Loan	4.95
Total	24.40

1. INTRODUCTION



Plastic Buckets have been used in Indian households for over 30 years in every stratum of society. The traditional galvanized iron, aluminum, and brass buckets have been to a great extent replaced by HDPE molded buckets. The important performance characteristics they provide include lightness, un-breakability, ease in handling, safety in use, resistance to boiling water and chemicals, color variability to match the environment, and economical cost. The HDPE Buckets are available in the market ranging from 5 liters to 25 liters capacity. However, the bucket having a 20-liter capacity is the most popular in the market. High-density polyethylene (HDPE) buckets are being produced in large quantities in India. The main advantages possessed by these buckets are low mass, unbreakability, ease in handling, safety in use, resistance to boiling water, and resistance to most chemicals. Blow molding is a manufacturing process by which hollow plastic parts are formed. In general, there are three main types of blow molding: extrusion blow molding, injection blow molding, and injection stretch blow molding. The blow molding process begins with melting down the plastic and forming it into a parison or in the case of injection and injection stretch blow molding (ISB) a preform. The parison is a tube-like piece of plastic with a hole in one end through which compressed air can pass. The parison is then clamped into a mold and air is blown into it. The air pressure then pushes the plastic out to match the mold. Once the plastic has cooled and hardened the mold opens up and the part is ejected. Plastic buckets generally tend to be portable, round containers of small to medium size that are used for the transportation or storage

of a range of materials in small quantities. They tend to be smaller than plastic tubs, though there are exceptions; they also tend to be larger than plastic bottles, though there are exceptions. They can be large enough to transport emulsifiers on a commercial or industrial scale, or they can be small enough for making beach sandcastles.

2 PRODUCT DESCRIPTION

2.1 PRODUCT USES

The plastic bucket can be determined in each household. The plastic bucket has many uses; some use it for bathing, and some for storing the eatable object. Plastic buckets are also used for commercial reasons for transportation and packaging. Buckets are also likely to be used for the storage of foodstuffs.

2.2 MANUFACTURING PROCESS

This process can be broken down into the following steps-

Raw material procurement

Production Process

Testing

Raw Material Procurement

To ensure complete quality control, all raw materials are checked strictly as per established quality standards and requirements. Individual supplier assessment and supplier rating are done depending upon the rejection levels at the incoming quality control stage. After quality control, sorting of raw material will be done. In the sorting procedure, the different types of materials will be sorted out and they will be stored in a neat storage area.

Production Process

1. Raw material processing: For recycled plastic, after sorting the HDPE plastic, by using a scrap grinder it will be ground. Scrap grinding is milling associated with declined plastic materials that are required to be ground into small pieces. Using the unique steel metal, blades are chosen according to the materials that have to be ground. Ground plastic with HDPE plastic granules is then sent to the injection molding process.



2. Injection molding: Plastic molding is done by using an injection molding machine. Plastic buckets are typically injection molded using plastic granules. In this process; Firstly granules are fed via a hopper into a heated barrel. Where the plastic will be melted at the set temperature. The melted plastic is then injected through a nozzle into a mold cavity where it cools and hardens to the configuration of the cavity and the formed plastic part is ejected out. Bucket handles can also be made using this process.



HDPE granules



Injection molding



Bucket (without handle)

3. Metal handle making process: Handles are galvanized steel wire handles, affixed to buckets, to aid in the transportation of materials from one area to another, such as on a worksite. Handles, with comfort grips or without, make carrying heavy items easier and safer. The handle-making machine will uncoil the raw material from a spool and run it through a series of opposing wheels that are used to straighten the wire before the shaping and forming process. In a fully automatic machine, the feeding axis is controlled by the CNC controller as it controls the overall length of the part, the lengths between forms as well as the length of all components formed. Once a straight wire is fed through the straightening rollers it is then fed to an articulating head whereas through a series of dies and pins the head twists and rotates around the straight wire whilst forming the wire in a

series of pre-programmed bends. Once the part is completed to length an automated shearing blade is used to snip the wire off from the coil length and to the exact desired size. Grips will be placed on the machine and wire will be automatically inserted into handle grips. Then the wire bending is done. The angles are created by bending heads allowing the wire to be formed and wound as per the required handle shape.



Wire uncoiling



Wire straitening



Wire cutting



Wire bending



Grip fixing



Metal handle

4. Assembly: In this step, Plastic or metal handles will be fixed with the bucket. This process can be done manually.



Testing

Quality Control: Rigorous testing is performed on formed products as the last step in the manufacturing line before packing, ensuring they meet industry standards Testing can include: Impact-resistance testing, Leakage Testing, Pressure testing, Transparency inspection, Drop test, Handle strength test, etc.

3. PROJECT COMPONENTS

3.1 Land & Building

The land required for this manufacturing unit will be approx. around 3000 square feet. Land Purchase and Building Civil Work Cost have not been considered as part of the cost of project. It is expected that the premises will be on rental and approximate rentals assumed of the same will be Rs.30,000 per month.

- Workshop Area- This area includes the setup and foundation space for all equipment's, work floor area, etc. Total workshop area is approx.1500 Sqft.
- Inventory Area- This area includes the storage space for all the raw materials and finished goods. Total inventory area is approx. 1000 Sqft.
- Office Area – This space includes staff working region, their accommodation space. Total workshop area is approx. 300 Sqft. This may be considered above the ground floor.
- Parking Space, Electric Mounting Space, and Others. This could be approx. 200 Sqft.

Land and building requirement may vary depending on the size of project.

3.2 Plant & Machinery

- **Scrap Grinder:** Scrap Grinder is used to grinding the recycled plastic. Scrap Grinders play a major role in the manufacturing process and it plays a vital display in Recycling Plastic Components. In this process used Plastic components are Finely processed and Ventilated using high-speed Air, and ground into small Sizes like chips.



- **Injection Molding Machine:** This machine is used for manufacturing plastic buckets and handles. Different types of dies and molds are used in this machine as per product design. It is typically used for the mass production process to manufacture thousands of identical items. For injection molding, firstly granules are fed via a hopper into a heated barrel. Where the plastic will be melted at a set temperature. The melted plastic is then injected through a nozzle into a mold cavity where it cools and hardens to the configuration of the cavity and the formed plastic parts will be ejected out.



- **Bucket Handle Making Machine:** Full Automatic Bucket Handle Making Machine is used to make bucket handles automatically. This machine can use steel wire, iron wire, aluminum wire, copper wire, and stainless-steel wire to manufacture different shapes and sizes of bucket handles. Which just needs to change suitable molds. A fully automatic machine also comes with a grip fixing feature.



- **Testing Equipment:** Testing equipment such as drop impact tester, leak detector, etc can be used. A drop weight impact test typically determines a material's resistance to a sudden external force. A leak detection machine is used to find leaks and other defects in plastic

containers. Leak detection systems include pressure decay and vacuum testing equipment



Machine	Quantity	Price
Scrap grinder machine	1	40,000
Injection molding machine	1	10,00,000
Handle making machine	1	4,00,000
Testing Equipment's	1	2,50,000
Miscellaneous	1	50,000
TOTAL		17,40,000

Note: Total Machinery cost shall be Rs 17.40 lakhs (Approx.) excluding GST and Transportation Cost.

4 LICENSE & APPROVALS

Basic registration required in this project:

- MSME Udyam registration
- GST registration
- NOC for fire safety board and from Pollution Control Board
- Trade License
- Factory License (Optional)
- BIS certification
- Choice of a Brand Name of the product and secure the name with Trademark if required.

Projected Profitability

<u>PROJECTED PROFITABILITY STATEMENT</u>					(in Lacs)
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Capacity Utilisation %	50%	55%	60%	65%	70%
<u>SALES</u>					
Gross Sale					
HDPE Buckets (5-20 Litre)	112.51	132.77	151.77	171.91	195.23
Total	112.51	132.77	151.77	171.91	195.23
<u>COST OF SALES</u>					
Raw Material Consumed	80.64	93.46	107.14	121.68	137.09
Electricity Expenses	2.88	3.17	3.46	3.74	4.03
Depreciation	2.84	2.41	2.05	1.74	1.48
Wages & labour	8.04	9.49	10.44	11.48	13.55
Repair & maintenance	2.03	2.66	3.04	3.44	3.90
Packaging	1.69	1.99	2.28	2.58	2.93
Cost of Production	98.11	113.17	128.39	144.66	162.98
Add: Opening Stock	-	2.29	2.64	3.00	3.38
Less: Closing Stock	2.29	2.64	3.00	3.38	3.80
Cost of Sales	95.82	112.82	128.03	144.28	162.55
GROSS PROFIT	16.69	19.96	23.74	27.63	32.67
	14.84%	15.03%	15.64%	16.07%	16.74%
Salary to Staff	4.68	4.91	5.80	6.26	7.01
Interest on Term Loan	1.67	1.47	1.06	0.64	0.23
Interest on working Capital	0.54	0.54	0.54	0.54	0.54
Rent	3.60	4.14	4.76	5.48	6.30
Selling & Administrative Exp.	1.13	1.99	2.28	2.58	2.93
TOTAL	11.62	13.06	14.44	15.50	17.01
NET PROFIT	5.07	6.89	9.30	12.13	15.67
	4.51%	5.19%	6.13%	7.06%	8.02%
Taxation	0.01	0.39	0.89	0.98	2.08
PROFIT (After Tax)	5.06	6.50	8.40	11.15	13.59

Projected Balance Sheet

<u>PROJECTED BALANCE SHEET</u>					(in Lacs)
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
<u>Liabilities</u>					
Capital					
Opening balance		3.70	6.20	9.20	12.26
Add:- Own Capital	2.44				
Add:- Retained Profit	5.06	6.50	8.40	11.15	13.59
Less:- Drawings	3.80	4.00	5.40	8.10	9.80
Closing Balance	3.70	6.20	9.20	12.26	16.04
Term Loan	15.12	11.34	7.56	3.78	-
Working Capital Limit	4.95	4.95	4.95	4.95	4.95
Sundry Creditors	1.88	2.18	2.50	2.84	3.20
Provisions & Other Liability	0.40	0.48	0.58	0.80	0.96
TOTAL :	26.05	25.15	24.79	24.63	25.15
<u>Assets</u>					
Fixed Assets (Gross)	18.90	18.90	18.90	18.90	18.90
Gross Dep.	2.84	5.24	7.29	9.03	10.51
Net Fixed Assets	16.07	13.66	11.61	9.87	8.39
Current Assets					
Sundry Debtors	3.75	4.43	5.06	5.73	6.51
Stock in Hand	3.63	4.20	4.78	5.40	6.09
Cash and Bank	0.10	0.17	0.14	0.13	0.17
Loans & Advances /Other Current Assets	2.50	2.70	3.20	3.50	4.00
TOTAL :	26.05	25.15	24.79	24.63	25.15

Projected Cash Flow Statement

<u>PROJECTED CASH FLOW STATEMENT</u>					(in Lacs)
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
<u>SOURCES OF FUND</u>					
Own Margin	2.44				
Net Profit	5.07	6.89	9.30	12.13	15.67
Depreciation & Exp. W/off	2.84	2.41	2.05	1.74	1.48
Increase in Cash Credit	4.95	-	-	-	-
Increase In Term Loan	17.01	-	-	-	-
Increase in Creditors	1.88	0.30	0.32	0.34	0.36
Increase in Provisions & Oth labilities	0.40	0.08	0.10	0.22	0.16
	-				
TOTAL :	34.59	9.68	11.76	14.44	17.67
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	18.90				
Increase in Stock	3.63	0.57	0.58	0.62	0.68
Increase in Debtors	3.75	0.68	0.63	0.67	0.78
Repayment of Term Loan	1.89	3.78	3.78	3.78	3.78
Loans & Advances /Other Current Assets	2.50	0.20	0.50	0.30	0.50
Drawings	3.80	4.00	5.40	8.10	9.80
Taxation	0.01	0.39	0.89	0.98	2.08
TOTAL :	34.49	9.61	11.79	14.45	17.62
Opening Cash & Bank Balance	-	0.10	0.17	0.14	0.13
Add : Surplus	0.10	0.07	(0.03)	(0.02)	0.04
Closing Cash & Bank Balance	0.10	0.17	0.14	0.13	0.17

DSCR

<u>CALCULATION OF D.S.C.R</u>					
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
CASH ACCRUALS	7.89	8.91	10.45	12.90	15.07
Interest on Term Loan	1.67	1.47	1.06	0.64	0.23
Total	9.56	10.38	11.51	13.54	15.29
REPAYMENT					
Instalment of Term Loan	1.89	3.78	3.78	3.78	3.78
Interest on Term Loan	1.67	1.47	1.06	0.64	0.23
Total	3.56	5.25	4.84	4.42	4.01
DEBT SERVICE COVERAGE RATIO	2.68	1.98	2.38	3.06	3.82
AVERAGE D.S.C.R.					2.73

Repayment schedule

REPAYMENT SCHEDULE OF TERM LOAN							
						Interest	11.00%
Year	Particulars	Amount	Addition	Total	Interest	Repayment	Closing Balance
1st	Opening Balance						
	1st month	-	17.01	17.01	-	-	17.01
	2nd month	17.01	-	17.01	0.16	-	17.01
	3rd month	17.01	-	17.01	0.16	-	17.01
	4th month	17.01	-	17.01	0.16		17.01
	5th month	17.01	-	17.01	0.16		17.01
	6th month	17.01	-	17.01	0.16		17.01
	7th month	17.01	-	17.01	0.16	0.32	16.70
	8th month	16.70	-	16.70	0.15	0.32	16.38
	9th month	16.38	-	16.38	0.15	0.32	16.07
	10th month	16.07	-	16.07	0.15	0.32	15.75
	11th month	15.75	-	15.75	0.14	0.32	15.44
	12th month	15.44	-	15.44	0.14	0.32	15.12
					1.67	1.89	
2nd	Opening Balance						
	1st month	15.12	-	15.12	0.14	0.32	14.81
	2nd month	14.81	-	14.81	0.14	0.32	14.49
	3rd month	14.49	-	14.49	0.13	0.32	14.18
	4th month	14.18	-	14.18	0.13	0.32	13.86
	5th month	13.86	-	13.86	0.13	0.32	13.55
	6th month	13.55	-	13.55	0.12	0.32	13.23

	7th month	13.23	-	13.23	0.12	0.32	12.92
	8th month	12.92	-	12.92	0.12	0.32	12.60
	9th month	12.60	-	12.60	0.12	0.32	12.29
	10th month	12.29	-	12.29	0.11	0.32	11.97
	11th month	11.97	-	11.97	0.11	0.32	11.66
	12th month	11.66	-	11.66	0.11	0.32	11.34
					1.47	3.78	
3rd	Opening Balance						
	1st month	11.34	-	11.34	0.10	0.32	11.03
	2nd month	11.03	-	11.03	0.10	0.32	10.71
	3rd month	10.71	-	10.71	0.10	0.32	10.40
	4th month	10.40	-	10.40	0.10	0.32	10.08
	5th month	10.08	-	10.08	0.09	0.32	9.77
	6th month	9.77	-	9.77	0.09	0.32	9.45
	7th month	9.45	-	9.45	0.09	0.32	9.14
	8th month	9.14	-	9.14	0.08	0.32	8.82
	9th month	8.82	-	8.82	0.08	0.32	8.51
	10th month	8.51	-	8.51	0.08	0.32	8.19
	11th month	8.19	-	8.19	0.08	0.32	7.88
	12th month	7.88	-	7.88	0.07	0.32	7.56
					1.06	3.78	
4th	Opening Balance						
	1st month	7.56	-	7.56	0.07	0.32	7.25
	2nd month	7.25	-	7.25	0.07	0.32	6.93
	3rd month	6.93	-	6.93	0.06	0.32	6.62

	4th month	6.62	-	6.62	0.06	0.32	6.30
	5th month	6.30	-	6.30	0.06	0.32	5.99
	6th month	5.99	-	5.99	0.05	0.32	5.67
	7th month	5.67	-	5.67	0.05	0.32	5.36
	8th month	5.36	-	5.36	0.05	0.32	5.04
	9th month	5.04	-	5.04	0.05	0.32	4.73
	10th month	4.73	-	4.73	0.04	0.32	4.41
	11th month	4.41	-	4.41	0.04	0.32	4.10
	12th month	4.10	-	4.10	0.04	0.32	3.78
					0.64	3.78	
5th	Opening Balance						
	1st month	3.78	-	3.78	0.03	0.32	3.47
	2nd month	3.47	-	3.47	0.03	0.32	3.15
	3rd month	3.15	-	3.15	0.03	0.32	2.84
	4th month	2.84	-	2.84	0.03	0.32	2.52
	5th month	2.52	-	2.52	0.02	0.32	2.21
	6th month	2.21	-	2.21	0.02	0.32	1.89
	7th month	1.89	-	1.89	0.02	0.32	1.58
	8th month	1.58	-	1.58	0.01	0.32	1.26
	9th month	1.26	-	1.26	0.01	0.32	0.95
	10th month	0.95	-	0.95	0.01	0.32	0.63
	11th month	0.63	-	0.63	0.01	0.32	0.32
	12th month	0.32	-	0.32	0.00	0.32	-
					0.23	3.78	
	DOOR TO DOOR MORATORIUM PERIOD	60		MONTHS			
		6		MONTHS			
	REPAYMENT PERIOD	54		MONTHS			

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