MOULDPLAS ENGINEERS
PR no: - Sample for Website_

6 September 2020

PLASTICS MOULDED HOUSEHOLD USE BUCKET MANUFACTURING PROJECT REPORT

27.60 Lacs Pieces Per Annum Production considered for 5 Litre & 10 Litre @ PA 10.80 Lacs & 16.80 Lacs pieces, respectively.

ABSTRACT

Plastics Processing is a sunrise industry in India. The PR gives you a total insight of Indian Plastics household molding industry and its profitability calculation. Under the present turbulent scenario if you are looking to invest into manufacturing of Plastics molded buckets then this is the right tool for you. Crafted well by a three decades experience holding Plastics machinery & Mould professional for serving all relevant information on a platter. So do not look elsewhere, just go for it!

AMITAVA SANYAL
Author

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Anatomy Of Plastics Bucket

1. The Bucket Body Moulded with Plastic Granules in Injection Moulding process.

2. The Metal handle with plastic Grip which is outsourced.

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1. Summary.

General: -

HDPE buckets are around in Indian market for as many as 30 years now and the usage and demand for these are ever increasing as many new areas of applications are arising over the years so as its volume and thus demand.

Since most of the households and other facilities in India today finds the usage of moulded HDPE buckets extremely useful, the demand for the same has been increasing over the years by leaps & bounds. Thanks to the rising demand and easy availability of raw material, many industries of various sizes are coming up at various parts of India. Even then it is still not adequate and hence, the idea of putting up an industry to produce HDPE moulded bucket has been conceived and decision at management level is taken to study the minimum feasible capacity and various project parameters so to arrive at a point to take a decision to invest.

The project idea in this case is to have a production facility capable to manufacture @ **27,60,000** buckets per year & the total comprising below mix.

- **5 Litre** buckets **@ 10,80,000** pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum

In the following table the estimated local market volumes and the anticipated production and sales are presented for the period 2021 to 2034. India is a big country. In this case we have just considered few districts in any Eastern Indian state and thus tried to arrive at a figure based on available information.

Table 1: Market and sales volumes 2021-2034 of the future plant (In Lacs pieces per year)

Year	Local Market volume		Local sales	
Litre	**5**	**10**	**5**	**10**
2020	121	146	9.72	15.12
2021	127.1	153.3	10.8	16.8
2022	133.4	161	10.5	17.1
2023	122	169	10.3	17.3
2024	128.1	177.5	10.0	17.6
2025	134.5	186.3	9.8	17.8
2026	123	195.7	9.5	18.1
2027	129.2	205.4	9.3	18.3
2028	135.6	215.7	9.0	18.6
2029	124	226.5	8.8	18.8
2030	130.2	237.8	8.5	19.1
2031	136.7	249.7	8.3	19.3
2032	125	262.2	8.0	19.6
2033	131.3	275.3	7.8	19.8
2034	137.8	289.1	7.5	20.1

Location:

The location of the project could be any tier 1, tier 2 or tier 3 cities/towns/ village in India placed anywhere in the country. Conditions will remain same in industrially developed states whereas in other backward areas government support & subsidies will be attractive.

The detailed location-based project report can be made against specific charges.

Engineering:

The engineering of the plant, the technical lay-out and the equipment selection is based upon the technical concept prepared by MPE of Kolkata, India.

The proposed plant will produce the plastic HDPE moulded buckets of 5 & 10 Litres to start with and later will make other sizes too as the business grows. The metal handles will be outsourced initially whereas at next stage there is possibility of offering buckets with plastic moulded handles too.

The production is subdivided into 4 sections i.e.:

- Moulding department.
- Handles assembly department.
- Quality control & Testing department.
- Stacking, Storage & despatch department.

The manufacturing process commences with the moulding of the plastic parts. i. e. HDPE bucket bodies of 5 Litres and 10 Litres. The moulded parts are then stacked and transported to the adjacent Handles assembly department wherein the holes are made manually by labour and handles are fixed on each

bucket. The buckets according to their colour and size are sorted and stacked separately inside one another up to a predetermined height at the stacking & storage department.

Then the quality control guy comes and inspects and checks for quality standard as per prescribed procedure. Once approved and cleared the consignment is despatched to the customers by truck with proper care taken for loading & transportation to the customer.

Cost and Revenue Estimates:

The following table depicts the total initial investment cost of the project.

Project Name :-	**MOULDED BUCKETS Manufacturing**		
Capacity per month	**2,30,000**		
3.1 Base Proposal (Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)			
COST OF THE PROJECT			
	Rs.in lakhs		
		APPROPRIATED	**GROSS BLOCK**
LAND & SITE DEVELOPEMENT	**16.06**	**19.54**	**35.61**
BUILDINGS - PARK & THEMING	**69.50**	**84.58**	**154.08**
PLANT & MACHINERY	**188.50**	**229.39**	**417.89**
UTILITIES	**48.50**	**59.02**	**107.52**
MISC.FIXED ASSETS	**11.50**	**13.99**	**25.49**
PREL. & PRE OP. EXPNS			
FINANCIAL & ADMIN COST	**29.18**		
TECHNICAL KNOWHOW	**5.00**		
WORKING CAPITAL 3 MONTHS	**364.40**		
CONTINGENCY @2.5%	**7.95**		
TOTAL	**740.59**	**406.53**	**740.59**
Say	**741**		

Table: Total Initial Investment in INR

Break-Down of Total Production Costs Covering a Normal Production Year

PRODUCTION COST (in Lacs INR)										
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Raw Material and Inputs	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
Utilities	65	65	65	65	65	65	65	65	65	65
Maintenance and repair	22	24	26	28	30	32	34	37	40	43
Labour direct	69	74	80	86	92	99	107	115	123	133
Administration Costs	39	42	45	48	52	56	60	65	69	75
Cost of marketing and distribution & Misc Exps	19	21	22	24	26	28	30	32	35	37
Total Operating Costs	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**
Depreciation	71	62	55	48	42	37	33	29	25	23
Cost of Finance	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
Total Production Cost	**1,644**	**1,782**	**1,777**	**1,773**	**1,771**	**1,775**	**1,786**	**1,800**	**1,815**	**1,833**
Item wise cost Break up/Pc										
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64

Table: Total Production Costs In INR

Sales Revenues:

Item	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Sales revenue	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
Less variable costs	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
VARIABLE MARGIN	**417**	**476**	**464**	**451**	**437**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	21	22	21	21	20	20	19	18	17	16
Less fixed costs	111	111	111	111	111	0	0	0	0	0
OPERATIONAL MARGIN	**306**	**365**	**353**	**340**	**326**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	16	17	16	16	15	20	19	18	17	16
Financial costs	46	36	26	16	6	0	0	0	0	0
GROSS PROFIT	**260**	**329**	**327**	**324**	**320**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	13	15	15	8	8	14	14	15	15	16
Income (corporate) tax	56	84	90	87	92	69	92	90	49	94
NET PROFIT	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**
in % of sales revenue	10	11	11	11	11	16	15	14	15	12
CUMMULATIVE CASH	**203**	**449**	**685**	**922**	**1151**	**1504**	**1819**	**2118**	**2439**	**2695**

Table: Sales revenues 2020 - 2030 (in INR per year)

	INR	INR	INR
MOULDED BUCKETS Size Ltr.	**Cost of Production / Pc**	**Selling Price / Pc**	**Profit / Pc**
	0.00	**0.00**	0.00
5	**46.06**	**60.00**	13.94
10	**76.48**	**90.00**	13.52

Financial Prospect Analysis:

Debt Service Coverage Ratio(DSCR)								
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
					(Rs. in Lakhs)			
	Source							
1	Profit after Tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83
2	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54
3	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
4	**TOTAL(1+2+3)**	**360.70**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**
	Deployment							
5	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
6	Loan Repayment	111.09	111.09	111.09	111.09	111.09	0.00	0.00
7	**TOTAL(5+6)**	**157.33**	**147.33**	**137.33**	**127.34**	**117.34**	**0.00**	**0.00**
8	**DSCR(4/7)**	**3.25**	**3.53**	**3.37**	**3.28**	**3.11**		
	Average DSCR	**2.36**						
***	What does a high debt service coverage ratio indicate?							
	Typically, a DSCR greater than 1 means the entity—whether an individual, company, or government							
	—has sufficient income to pay its current debt obligations							

Table: Results of Financial Analysis

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Breakeven Point Calculation 1										
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1720.08	1722.16	1725.13	1729.08	1737.83	1753.95	1771.27	1789.90	1809.92
Break Even Percentage	**81%**	**80%**	**80%**	**80%**	**80%**	**80%**	**81%**	**82%**	**83%**	**84%**

Breakeven Point Calculation 2										
	When Cash Surplus of last year is reinvested into business every year									
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1516.72	1476.88	1488.40	1492.05	1509.56	1400.28	1456.89	1490.86	1489.04
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	**255.89**
Break Even Percentage	**81%**	**70%**	**68%**	**69%**	**69%**	**70%**	**65%**	**67%**	**69%**	**69%**

The **break-even point** will **increase when** the amount of fixed costs and expenses **increases**.
In other words, if a greater proportion of lower contribution margin products are sold,
the break-even point will increase. (Contribution margin is selling price

Here we are talking about buckets which are low margin high volume sales products.

Table: Results of Financial Analysis

INTERNAL RATE OF RETURN (IRR)											
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						(Rs. in Lakhs)					
1	**Total Project Cost**	**740.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2	Profit after tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	3459.47
3	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
4	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
	Net Cash Flow (2+3+4) - 1	**-379.90**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**	**299.04**	**320.88**	**233.26**
	Internal Rate of Return	**99%**									
***	The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero.										
	In other words, it is the expected compound annual rate of return that will be earned on a project or investment.										
	In the calculation above , an initial investment has a 99% IRR. That is equal to earning a 99% compound annual growth rate.										

Table: Results of Financial Analysis

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VIABILITY STATEMENT

(Rupees in lakhs)

INCOME FROM	year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5 Ltr.	583	648	648	648	648	648	648	648	648	648
10 Ltr.	1,361	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512
TOTAL INCOME	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
EXPENSES										
RAW MATERIALS										
Total	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
SALARIES	69	74	80	86	92	99	107	115	123	133
POWER	65	65	65	65	65	65	65	65	65	65
REPAIR & MAINT	22	24	26	28	30	32	34	37	40	43
ADMIN EXP	39	42	45	48	52	56	60	65	69	75
MISCELLANEOUS	19	21	22	24	26	28	30	32	35	37
TOTAL	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
GROSS PROFIT	417	476	464	451	437	422	406	389	370	350

VIABILITY STATEMENT CONTD.

	Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
	1	2	3	4	5	6	7	8	9	10
INTEREST ON LOAN	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
DEPRECIATION	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
PBT	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
TAX	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
PAT	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	233.26
CASH AVAILABLE	314.45	356.36	347.82	348.12	339.35	353.67	314.38	299.04	320.88	255.89
LOAN REPAYMENT	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	255.89
CUMMULATIVE CASH	203.37	448.64	685.37	922.40	1150.67	1504.33	1818.71	2117.75	2438.64	2694.53

Table: Results of Financial Analysis

Conclusion:

Based on the good results of the financial project analysis the implementation of the project, under the same conditions as assumed in the present report, can be recommended.

1. Introduction.

Plastic Buckets have been used in Indian households for over 3 decades. It has earned wide level of acceptance in the society. There are various types and designs of buckets available these days in the market, we are discussing here a project for manufacturing plain HDPE molded buckets with metal handles as that is the most basic bucket used by common Indians. The traditional galvanized iron, aluminum and brass buckets have been to a great extent been replaced by HDPE molded buckets. The important performance characteristics they provide include lightness, being non-breakable, ease in handling, safety in use, resistance to boiling water and chemicals, color variability to match environment and economical cost. The HDPE Buckets are available in the market in various sizes. Generally, we see 5 to 25 Litres being mostly used.

1. Project Idea.

The original project idea is the realisation of a plant for the annual production of 5L buckets 10,80,000pieces per annum & 10 L buckets 16,80,000 pieces per annum to be produced in any part of India. There are many manufacturers for these kinds of buckets already in India at various levels and turnover. But the market for 140 crores Indian are so huge domestically, keeping aside export market for the time being now that the idea of putting up such a manufacturing plant looks lucrative.

The buckets are used in everyday life for various uses and finds its application almost in every Indian household in multiple numbers making its demand very high and because of possibility of making the buckets in various colors and since they weigh very less there is high level of acceptance among the consumers in India.

2. Project History.

There is no such history involved while identifying this project as possible option for investment. However, the investor is likely to conduct a preliminary pre-investment study if not already done covering the points like

- Estimated market size.
- Major importers/distributors.
- Country sources of Moulded buckets
- Historical and projected future demand
- Prices and import tariff if any import now in India.

This pre-investment study if conducted is expected to be specific to an area nearer to the proposed factory as the capacity proposed is not very large and so it is expected to be able to cater to the local consumption completely ruling out the current requirement of sending to distant places.

However, if we consider the current information on the export market then it is limited to indications on the potential of exporting to neighbouring countries or even to African continent and far east markets.

The covid 19 situation throws open fresh opportunities to Indian manufacturers as the existing supply chain has been broken and chances of getting them restored in near future is very remote.

Objective of the Study

The aim of the pre-investment study is

- to assess the market potential to produce moulded bucket in India. i.e.
- to analyse the past and present demand for moulded bucket {5 Litre and 10 Litre} in India.
- to assess the future domestic market potential of moulded bucket {5 Litre and 10 Litre} in India.

- to assess the export potential of moulded bucket {5 Litre and 10 Litre} and their anticipated competition in local and foreign markets with other sources of supply and
- to finalize the technical elements of the project

Market & Plant capacity.

Product Profiles.

Plastic bucket can be found these days in almost every household. Plastic bucket has many uses; some use it for bathing, and some for storing eatable object. Plastic buckets are also used for commercial reason for transportation and packaging. The buckets under consideration here are having two parts. One is the bucket body which is molded out of HDPE granules and the second part is a metal handle which is fitted with molded bucket by two holes on either side of the neck and the handle will have a plastic soft grip in the middle for comfortable holding by hand.

Plastics buckets have made considerable inroad into the overall market for buckets during last 3 decades due to its lower cost, lower weight to volume, wider range of colors and ease of handling

& transport etc. and it is one of the fastest growing market worldwide. Buckets are made of HDPE & PPCP material both and it offers a variety of colours, choices, design etc suiting ever changing demand of the market.

Demand & Market

General Remark:

Prior to analysis of the demand and market in detail, it is helpful to define the terms 'demand' and 'market' regarding the envisaged products. i.e. moulded bucket of various sizes. A market is the set of all actual and potential buyers of a product. whether individuals or organizations. The major markets for the envisaged products, are consumer markets, as retailers, institutions, whole sellers, online platforms, and supermarkets, as well as the private and governmental establishments and others.

The term market demand or shortly demand of a product is the total volume that would be bought by all important defined customer groups, (market segments) in a defined geographical

area. in a defined period, in a defined marketing environment under a defined marketing programme.

The market can be divided into:

Actual Market: which comprises the set of buyers who actually buy the products or will buy these products in the future for the actual uses.

Potential Market: which comprises the set of potential buyers who will buy these products in the future who are actually not yet using these products.

The principal aim of the market analysis is to investigate the domestic market of moulded bucket. However, it is also necessary to check other markets to identify export opportunities.

The information presented in this study is gathered principally from available secondary sources such as trade statistics compilations. Key informant interviews with selected importers/distributors and government agencies were likewise conducted to substantiate/verify data and to obtain better indications of future demand.

Estimated Market size.

Approximate present size of demand, Its past growth, major determinants & Indicators.

As per available market reports the consumption of total HDPE Injection Moulded material for manufacturing household items including buckets in India was 498 KTA in 2016-17 having growth rate @ 9 % CAGR. The consumption of HDPE Injection Moulded Items in India had been 134 Kilo Tons during the year 2004-05. However, the moulded buckets and mugs are fast moving items. The growth rate and demand are envisaged on an average of 11 – 12 percent per annum.

Whereas PPCP is also another material used these days to manufacture the buckets and as per report available the material consumption in injection moulding household segment has been 1640 KTA with a growth rate of 13% CAGR in the year 2016-17.

Projected future demand.

In accordance with the Working Group Report on Petrochemicals, Ministry of Chemicals & Fertilizers, the demand of total HDPE Injection Moulded items including buckets in India is stated to be 2400 Kilo Tones by 2017-18 having growth rate @ 16%. However, the moulded buckets and mugs are fast moving items. The growth rate and demand are envisaged on an average 11 – 12 percent per annum.

Prices & Import tariff.

The bucket is such a product which is a volume-based business. As there is demand in every part of the society so as its manufacturers. There are many manufacturers of plastics bucket ranging from small to big. As the manufacturer sets up an industry, he will generally start with Two or three machines and once he settles down and grows the no of machines will increase.

So, it is a business in a price conscious consumer market, and one has to be sure to manufacture with least cost so to remain competitive and thus grow.

The market in India itself is so big that until we talk about a very large set up producing very high quantity and variety, there is no point in thinking about the export market. The producer will have no time to export with a smaller set up as domestic demand will consume all his produce in no time.

India is not importing any plastic bucket at present. So, question of considering import tariff is ruled out in this case.

Export market potential.

Unless we talk about a very high investment set up with multiple number of machines, the export market

for plastic moulded bucket may not be explored as domestic demand is quite high and increasing at high rate.

Sales Forecast.

Anticipated competition.

The competition will be from large and small players both. There are two types of producers in the business of plastic bucket manufacturing. The branded supplier and the unbranded supplier. There is also a premium product segment and a low-end segment. All are having their own market share and customer.

Depending upon the business plan the entrepreneur decides to have, the competitors will change, and their number will vary. So, it is a very dynamic market but very competitive market as well specially when Indian buyers have a reputation of being very price conscious.

Localization of Market.

The proposed plant under investigation would deliver its products to private and governmental agencies, retailers, whole sellers and likes. This will also deliver to online platforms and supermarkets & malls.

The main market will be the most populated tier 2 & tier 3 cities and remote villages in the vicinity as metro cities are already flooded with supplies made from various manufacturers nearby.

Sales Program.

It has initially been planned by the investor to produce

- 5 Litre buckets @ 10,80,000 pieces per annum
- 10 Litre buckets @ 16,80,000 pieces per annum

because this production seemed to be easily marketable regarding to the number and size of moulded bucket, as well as the minimum economic size of a moulded bucket production plant. However. the results of the market investigations indicated a higher market volume for these sizes of moulded bucket in the India than anticipated. Consequently, it was recommended,

and accepted by the investor, to also include the production of other sizes within 6 months of starting commercial production.

Since the 20 Litre moulded bucket have a market volume of about 30 % it is decided that the production programme should be extended by this size.

From a technical point of view, it can be stated that the injection moulding machines are equipped with tools to change the moulds. No changes in conceptual engineering of the plant would be necessary. Only the scope of supply has to be extended by moulds for the production of 20 Litre moulded bucket.

Estimated annual Sales revenues.

Price is the only element in the marketing mix that produces revenues; the other elements represent costs.

Therefore, to set a price is a problem which must be carefully considered, first. when a newly established company has to introduce its product onto the market where these products already are offered.

While market demand might set a ceiling and costs set a floor to pricing, the following analyses of competitors prices will help to establish where the prices might be set.

The price must principally be somewhere between one that is too low to produce a profit and one that too high to produce any demand.

Figure below summarizes these major considerations in price setting.

Fig.: Major Considerations in Setting a Price

Low Price				High Price
Loss	No loss no profit			
No Possible profit at this price.	Product Cost	Competitor Prices & Price of Substitutes.	Unique product features	No Possible demand at this price.

Production costs set a floor to the price. Competitors prices are known and so provide an orientation point that the company will have to consider in setting its selling price.

Estimated annual cost for sales promotion & Marketing.

One of the definitions of marketing is the following:

'Marketing is getting the right goods and services to the right people at the right place at the right time at the right price with the right communication and promotion'.

Although the direct market for the envisaged products are commercial and institutional customers. it is obvious that marketing must be done with regard to the needs of the end-user (consumer).

Marketing generally comprises the strategic-conceptional aspects of selling, whereas selling is very often done in a separate sales department.

For smaller companies marketing and sales department can be concentrated in one department.

Sales promotion consists of a wide variety of promotional tools designed to stimulate earlier and/or stronger market response.

They include tools for:

- ✓ consumer promotion (samples. Discount, premiums. etc.)
- ✓ trade promotion (buying allowances. free goods, advertising. etc.) and
- ✓ sales-force promotion (bonuses. contests, etc.)

All marketing and sales promotion efforts have one common thing; they cost money.

Concerning the marketing of moulded buckets (including sales promotion) the marketing and sales promotion cost have been estimated and reflected in the project report.

Determination of plant capacity.

Feasible nominal plant capacity.

To find an optimum plant capacity, is of greatest importance for project profitability. The increase of plant capacity is very often a good measure to reduce production costs. since investment cost and other fixed costs are not increased in direct proportion of plant capacity.

On the contrary the market size must be taken into consideration and may require reducing the plant capacity to the smallest economically feasible plant size. as it is the case of the projected plant.

The nominal capacity of the projected plant which corresponds to the smallest economically feasible plant has been fixed at **27,60,000** buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000**pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum

Concerning the envisaged type of products - pertaining to all types of usage segment, special attention must be paid to the fulfilment of quality requirements by GMP (Good Manufacturing Practices).

These GMP are also of highest importance for project profitability. The sales targets even at relatively small capacities can only be reached if high quality products are produced and a constant high-quality level can be assured to the customers over long periods.

Quantitative relationship between Sales, plant capacity & material output.

The sales of the future plant are based on the following schedule of realisation until full production at nominal capacity:

2020: Design. delivery. erection and commissioning of the plant

2021: First year of operation (at 90% of nominal capacity}. Correspond to a production of

- **5 Litre** buckets **@ 9,72,000** pieces per annum
- **10 Litre** buckets **@ 15,12,000** pieces per annum

2022: Second year of operation (at 100 % of normal capacity). Correspond to a production of

- **5 Litre** buckets **@ 10,80,000**pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum

2023 - 2034: Full operation in accordance with nominal capacity.

The theoretical market volumes and the Correspond to the sales of **5 Litre** buckets **@ 10,80,000** pieces per annum & **10 Litre** buckets **@ 16,80,000** pieces per annum of the future plant are presented in table below.

Table Market and sales volumes 2020-2034 of the future plant (in Lacs pieces per year)

Year	Local Market volume		Local sales	
Litre	**5**	**10**	**5**	**10**
2020	121	146	9.72	15.12
2021	127.1	153.3	10.8	16.8
2022	133.4	161	10.5	17.1
2023	122	169	10.3	17.3
2024	128.1	177.5	10.0	17.6
2025	134.5	186.3	9.8	17.8
2026	123	195.7	9.5	18.1
2027	129.2	205.4	9.3	18.3
2028	135.6	215.7	9.0	18.6
2029	124	226.5	8.8	18.8
2030	130.2	237.8	8.5	19.1
2031	136.7	249.7	8.3	19.3
2032	125	262.2	8.0	19.6
2033	131.3	275.3	7.8	19.8
2034	137.8	289.1	7.5	20.1

The local market volumes up to 2023 correspond to the projected future demand. From 2023 up to 2034 an AAGR (average annual growth rate} of 5 % has been assumed.

As a result of these considerations the nominal capacity of the future plant is defined as follows:

27,60,000 buckets per year, total comprising below mix.

- 5 Litre buckets @ 10,80,000 pieces per annum
- 10 Litre buckets @ 16,80,000 pieces per annum.

This is with an assumption that 10-Litre bucket production will be more profitable in the long run than 5 Litre buckets. Considering no capacity increase except one more mold if planned.

Materials & Inputs.

Raw Materials & Operating supplies.

The following materials are necessary to produce moulded bucket:

Raw material:	HDPE.
Semi-finished products:	Bucket metal handles with plastic grip.
Auxiliary materials	NIL

All the above materials are available in India in sufficient quantity.

Raw material & construction specifications

- Bucket body is moulded from HDPE (High Density Polyethylene)

The material must correspond to the IS: 3730 (1984) Specification, the Indian specification for moulded bucket. or to equivalent standards. Mother specification for the HDPE buckets apply to IS 2828 – 1964*.

Material - The buckets shall be molded from natural or colored HDPE. The HDPE used for injection molding of buckets shall be of grade 45 MA or 54 MA (see IS: 7328-1974) or equivalent.

If the buckets are to be used for temporary storage of food articles, then the basic resin and other additives shall conform to IS: 10146-1982 or amendments later.

The handles will be rigid and made from metal, coated metal, or HDPE. Where metal handles are used, they will be corrosion resistant. If they are injection moulded then, then HDPE to be used of grades 45 MA or 54 MA or equivalent as per IS 7328-1992 & AMD 2 2009.

The Buckets to have smooth surface finish without any blemishes. Any spruce [stalk] shall be neatly removed by milling or by cutting. The buckets shall be free from moulding flash.

Material detailed specification to be as below: -

Characteristics of the HDPE grade to use			
Property	***Test Method***	***Unit***	***Value***
MFI 9190 Deg C/ 2.16 Kg)	ASTM D 1238	gm/10 min	20
Density (23 Deg C)	ASTM D 1505	gm/cc	0.95
Tensile strength @ yield	ASTM D 638	Mpa	22
Elongation @ Yield	ASTM D 638	%	12
Flexural modulus.	ASTM D 790	Mpa	900
Notched Izod impact test	ASTM D 256	J/M	30
Vicat softening point	ASTM D 1525	Deg C	123

Rough estimates of annual costs of raw materials and operating supplies

The unit price estimates are presented in the following Table below.

Table: Unit price estimates for raw material, semi-finished products and auxiliary materials for moulded bucket production

UNIT PRICE ESTIMATES	
Designation	*Unit price*
	INR/ UNIT
HDPE	96 / KG
HANDLE 5 LITRE	10/PC
HANDLE 10 LITRE	14/PC
Colour Masterbatch	140/KG

The estimates of annual raw material and operating supplies costs are presented in Tables separately.

Table Raw materials and operating supplies costs per piece of 5 Litre buckets in INR and corresponding annual costs.

INR/Pc	**Year 2**
5 Litre.	46.06
10 Litre.	76.48

Planned production at a normal year of production: 10,80,000 pieces.

Corresponding raw materials and operating supplies costs: 4,97,44,800/- INR/year.

Table: Raw materials and operating supplies costs per piece of 10 Litre buckets In INR and corresponding annual costs.

INR/Pc	Year 2
5 Litre.	46.06
10 Litre.	76.48

- Planned production at a normal year of production: 16,80,000 pieces.

Corresponding raw materials and operating supplies costs: 12,84,86,400/- INR/year.

Utilities.

Electricity

The electricity high tension power supply rate in India varies from state to state. However, experience says that the rates per kwh consumed for a 11 KV 3 Phase 50 Hz connection for 1000 KW installed load hovers between INR 7 to 9 per kwh consumed.

So, depending upon the area where the factory is going to be put up, the power cost will be applicable. For the sake of calculating the cost the average rate of INR 8 per kwh has been taken in this calculation.

The following link of Torrent Power Gujarat state rate will be useful to understand power tariff in India as a good reference which is reproduced below:-

https://www.gercin.org/wp-content/uploads/2019/08/TPL-D-A-Tariff-Schedule-FY-2017-18.pdf

Water

Water for any area in India is either provided by the Local Water Utilities Administration at a very nominal charge or the unit itself arrange for water supply in house.

Just to understand the prevailing rate in vatva industrial area Gujarat India for understanding, the official release of association says that for 51 metric tons of water consumed per day the monthly charge is approx. INR 21,000/- per month for industrial water supply via a 25 mm ferule supply pipe.

Here also similar rate is considered for production cost calculation.

Location & Site.

Economic & social background of business in India.

The following tables characterize the economic (Table 4.1) and social (Table 4.2) climate in India.

Table: Economic Indicators of the India

ECONOMIC INDICATORS:	India			
August 26, 2020				
Inflation. Growth			Forecast	
	2018	2019	2020	2021
GDP Growth Rate [%/Yr]	6.10%	4.20%	-4.00%	5%
Inflation Rate [%/Yr]	3.40%	4.80%	3%	4.00%

Source: - ADB bank

ECONOMIC INDICATORS OF INDIA:

Main Indicators	2017	2018	2019 (e)	2020 (e)	2021 (e)
GDP *(billions USD)*	2,652.25	2,718.73e	2,935.57	3,202.18	3,509.65
GDP *(Constant Prices, Annual % Change)*	7.2	6.1	4.2	-4.5	6.0
GDP per Capita *(USD)*	2,014e	2,038e	2,172	2,338	2,529
General Government Balance *(in % of GDP)*	-6.8	-6.6	-7.4	-7.0	-7.0
General Government Gross Debt *(in % of GDP)*	67.832	68.053	69.043	68.524	67.747
Inflation Rate *(%)*	3.6	3.4	4.5	3.3	3.6
Current Account *(billions USD)*	-48.66	-57.18	-57.81	-73.54	-80.45
Current Account *(in % of GDP)*	-1.8	-2.1	-1.1	-0.6	-1.4

Source: IMF – World Economic Outlook Database - Latest available data. Note: (e) Estimated Data

Specific site for the project.

The site of the project can be anywhere in India. But one has to keep good connectivity, close to place of residence, possibility of selling entire products to be manufactured in the nearer market, favourable industrial policy and good infrastructure, availability of manpower, electricity, good road connectivity,

no history of labour unrest in the area are some of the basic requirements which needs be considered before selection of a project site.

Project Engineering.

Conceptual Engineering of the proposed plant.

The engineering of the plant, the technical lay-out and the equipment selection is based upon the technical expertise provided by any good experienced person either hired by customer or from customer's own network or contact or family as the case may be. This could even be the customer himself in case he is well acquainted with the proposed project.

The plant will be devised for an annual production of

27,60,000 buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000** pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum.

The proposed plant will produce the plastic parts of the moulded buckets, whereas the metal handles will be outsourced.

The production is subdivided into 4 sections. i. e.:

- 5 Litres & 10 Litres moulded buckets moulding.
- Assembly of Handles with the bucket body.
- Quality Control Department.
- Stacking of finished bucket & despatch.

The manufacturing process commences with the moulding of the plastic buckets on injection moulding machines.

The moulded buckets are then fitted with outsourced metal handles and then stacked upon one another as per size and colour and then despatched by carrier vehicle to the customer's place.

Technology & Equipment.

Department Description

Molding department.

As mentioned previously, the buckets will be moulded in this department. Therefore, the size of the machine yard and dies will be selected accordingly.

The raw material (HDPE) in granules must conform to the required Indian standard and be accompanied by a certificate which guarantees its suitability for this specific use.

The plastic granulate is brought to melting point and then injected into the dies. The machine will be programmed so that opening occurs only after the moulded parts become solidified.

Department Sizing

The sizing of the plant is based on the following parameters:

300 working days/year with 3 daily shifts for a total of 7,200 hours/year

Three nos Injection moulding machines of 350 Tons each with separate moulds 10 Litre & 5 Litre buckets have been considered. Also, an average of 18 seconds cycle time for 5 Litre mould & 24 Seconds for 10 Litre moulds have been considered.

All three are single cavity moulds for both 5 & 10 Litre buckets.

The above parameters make a total of following number of buckets per year.

27,60,000 buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000**pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum.

To avoid water wastage, moulds cooling, a closed cooling water circuit has been provided.

Assembling department.

This is the place where we do the most labour intensive operation of the project. The labour force use a small bench top fixture to cut two holes at the neck of the bucket 180 degrees apart in line. These holes will hold the metal handles firmly.

Now here the labour fixes metal handles to individual buckets.

Stacking, Quality control, Packing & Dispatch department.

Now since the buckets are ready it is stacked on the floor at designated places till allowed height in order of size and color being produced and kept ready for dispatch.

There is no special requirement for buckets to pack. While loading on the trucks, it is ensured that they are well covered by thick plastic films or woven clothes or tarpaulins so to protect them from everything during transit.

It is the department from where the loaded trucks are dispatched to the customers.

Auxiliary Equipment.

Compressed air system

The compressed air system is designed to supply the compressed air necessary to the whole factory.

Product Specification

Compressor Type	Reciprocating Air Compressor
Discharge Pressure (in bar)	4 bar
Compressor Brand	Any good Indian Brand.
Power Source	AC Three Phase
Number of Compression Stages	Single Stage
Horsepower (HP)	10 HP
Maximum Flow Rate (in cfm)	21 - 50 cfm
Lubrication Style	Oil Free

Scrap Grinder.

A grinder machine for in house scrap grinding & to be fed to injection moulding machine further to be installed and the detailed specification is as below:-

630 mm x 630 mm mouth opening will ensure that all standard size buckets can be easily fed and crushed.

Model No.	MPEG 2525-26-400
Power (hp)	25/30/40
Rotating Diameter(mm)	400
Inlet size (mm)	630x630
RPM	760
Rotary blades(pcs)	. 3/4/6
Stationary blades(pcs)	. 2/4
Capacity(kg/hr)	300-400
Weight kgs	2300
LxWxH	75"x60"x96"

Diesel Generator Set

A diesel genset of 400 KVA to install for backup power in case of a power cut.

Tumbler Mixer

A 100 kgs per batch tumbler mixer to install for mixing of masterbatches/colour with resin.

Transport of materials

The transportation of various goods inside. for loading and unloading, from warehouse to departments, is undertaken by the following vehicles:

2 nos manual fork-lifts with a capacity of at least 5 tons and 3-meter elevation.

Shelving.

The method to be adopted for warehousing goods needs to be known in order to determine the arrangement and installation of the shelving. The material will be divided into the following sections:

- ✓ Moulds for moulding department
- ✓ Raw material store

Regarding all other materials, these may be stored on pallets.

Spare Parts.

For all parts normally used and for items largely employed. a quantity of spares to guarantee the operation of all machinery for a period of 2 years will be procured and stored properly.

Rough estimate of technology cost.

License for know-how and Patent

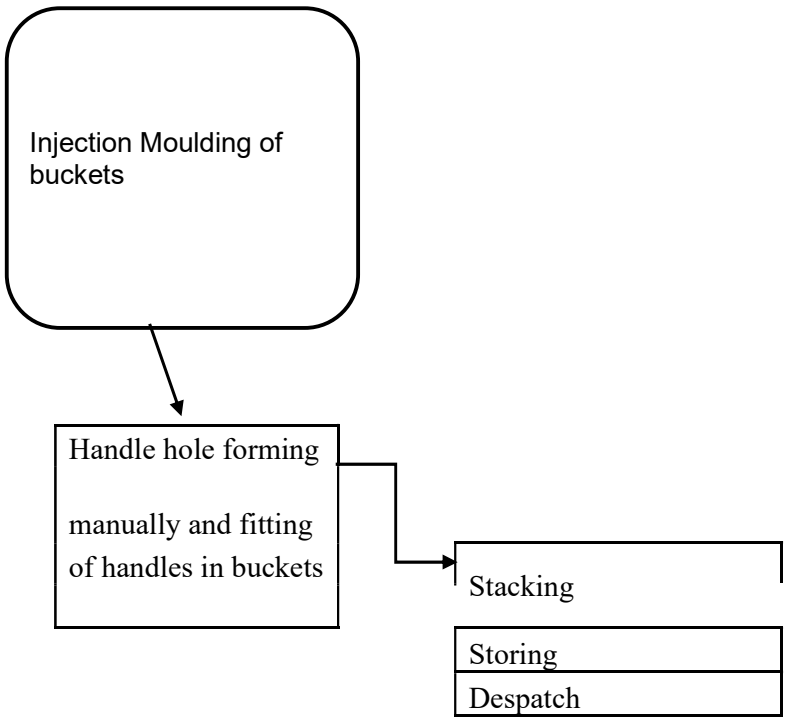
The fee if agreed with any service proving firm for license & patent if any to be quantified in advance and paid in due course.

Basic engineering

The basic engineering fee for this project if any as would be agreed upon to be paid upon its getting due.

Flow of production & quality control.

Flow of production.



flow chart.

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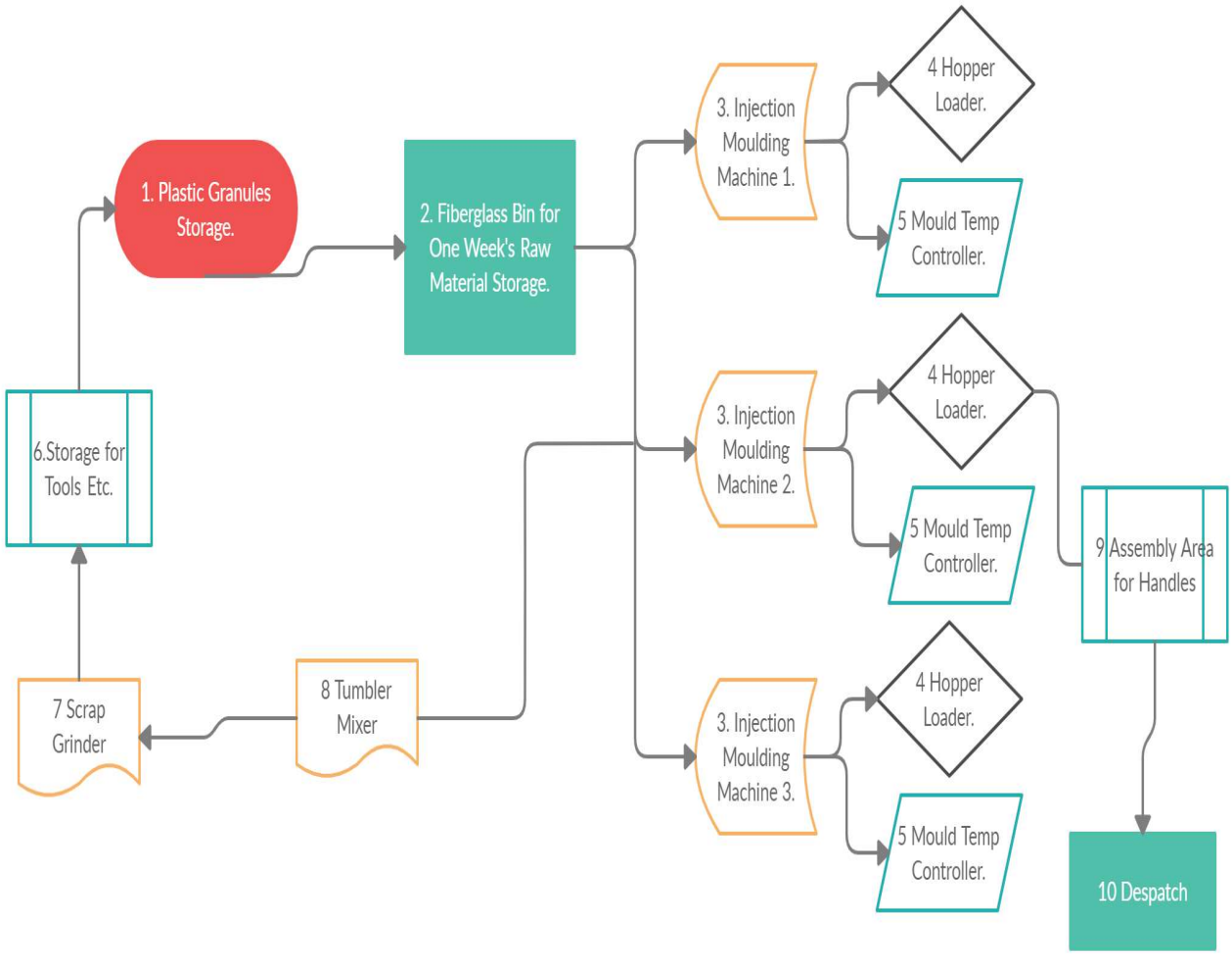
PLANT FLOW-SHEET DETAILS



1. Storage for plastic raw materials.
2. Fibreglass bin containing the plastic material required for 1-week consumption.
3. Injection moulding machines for plastic material.
4. Automatic hopper Loader.
5. Automatic mould temperature controller.
6. Storage for tools etc
7. Grinder machine
8. Tumbler mixer.
9. Assembly area for handles.
10. Stacking & despatch area.

The raw material used is HDPE in granule form & will be supplied in bags of 25 kgs.

The material is conveyed into the hoppers of the presses used for moulding. In the first section the following items are produced:

- ✓ 10 Litre bucket body in two numbers Injection moulding machines.
- ✓ 5 litre bucket body in one number Injection moulding machine.

The products made on this machine will be separately forwarded to the assembly department.

Care should be taken with these products to ensure that it does not encounter with any type of impurity/dirt. A simple means of ensuring this could be a clean & dirt-free factory environment with clean concrete flooring.

The Products move to the assembly area where the handles are put in place and then in the stacking area the buckets are kept one inside the other with inverted position up to a predetermined height inside the factory storage area and then despatched with proper care & covering when put on truck.

Quality control.

Production control

A systematic control of production is necessary particularly at the key points. A fundamental control is to be carried out on moulded buckets concerning the surface finish, colour, gloss and smooth surface with flash or any defects or short moulding.

The fitting of the handles, its grip and tightness also to be checked once assembled.

The laboratory tests which must be affected on some randomly picked up bucket from a lot to ensure it conforms to the prescribed standard.

The quality requirements are laid down in the following IS-standards.

IS: 2828-1964 / IS : 7328-1974 / IS : 10146-1982 / IS : 10141-1982 / IS : 2530-1963 / IS : 4905-1968

Laboratory Analyses

TESTING OF POLYETHYLENE BUCKETS

A-I. DISTORTION TEST

A-1.0 Outline of the Method –

Distortion test is carried out by hanging a bucket filled with water at 60°C and then determining the increase in diameter and depth of the bucket.

A-I.1 Procedure - Suspend the bucket by its handle at the center from a double hook, the arms of which are approximately 75 mm apart (see Fig. 1). Measure the diameter d of top at right angles to handle (including spout, if any) and depth h from rim to bottom of bucket. Pour-water at 60°C until it is

filled to a level of 25 mm from the rim. After five minutes, measure d and h, and report the increase in dimensions as percentage of the initial dimensions.

A-2. OVERLOAD TEST

A-2.0 Outline of the Method - Overload test is carried out by hanging a bucket filled with specified load for a specified period and then examining for any break or detachment of the handle.

A-2.1 Procedure - Suspend the bucket as prescribed in A-1.1. Pour into the bucket lead shots or any other suitable material of a mass equal to twice that of the water required to fill the bucket. Examine the bucket or handle for any break or detachment of the handle from the bucket at either side after 30 minutes.

High density polyethylene (HDPE) buckets are being produced in large quantities in India.

The main advantages possessed by these buckets are low mass, unbreak ability, ease in handling, safety in use, resistance to boiling water and resistance to most of the chemicals. This standard is intended to serve as a guide in assisting the manufacturers to upgrade the quality of buckets currently produced in the country and the Committee responsible for its preparation has taken special care to see that the consumers' interest is fully protected.

Fore more details on quality norms and standard to follow one has to refer the ***IS : 7328-1974.***

Equipment list.

The equipment is designed for the production of **27,60,000** buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000** pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum.

in 300 working days at three working shifts of eight hours.

The plant uses only Made in India equipment.

Preliminary list of machines and equipment Installed power.

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				Hrs	Days	Per Month		
2.2	3.1 Base Proposal (Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)			22	25	550	Hrs	
No.	**Description**	**Q'ty**		**Unit Price**	**Total Amount**	**Remark**	Power KW	
A	**Injection Moulding Machine-**							
1	Injection Molding Machine- 5 Ltr Bucket (350tons)	3	Set	46,00,000.00	1,38,00,000.00	3-shfit	186	350 Tons
2						3-shift		
3						3-shift		
	Total-Sum	**3**			**1,38,00,000.00**			
B	**Molds**							
1	HDPE Bucket Single cavity mould for 5 Ltr.	1	Set	3,50,000.00	3,50,000.00	3-shift		
2	HDPE Bucket Single cavity mould for 10 Ltr.	2	Set	4,00,000.00	8,00,000.00	3-shift		
3								
4								
5								
6								
7								
8								
9								
	Total-Sum	**3**			**11,50,000.00**			
C								
1		0	Set		0.00			
2		0	Set		0.00			
3		0	Set		0.00			
		0			**0.00**			
D								
1		0	Set		0.00			
2		0	Set		0.00			
3		0	Set		0.00			
		0			**0.00**			
E								
1		0	Set		0.00			
2		0	Set		0.00			
3		0	Set		0.00			
		0			**0.00**			
F								
1		0	Set		0.00			
		0			**0.00**			
G								
1		0	Set		0.00			
2		0	Set		0.00			
		0			**0.00**			
H	**Utility Equipment for Injection Molding Machine**							
1	Grinder 25 inch x 25 inch mouth opening	1	Set	4,50,000.00	4,50,000.00		30	
2	Tumbler Mixer 100 Kgs per Batch	1	Set	2,00,000.00	2,00,000.00		10	
3	Diesel Generator Set 400 KVA	1	Set	18,50,000.00	18,50,000.00			((kw/thyris
4	Cooling Water Supply+cooling Tower + Chilling Plant	1	LS	10,00,000.00	10,00,000.00		40	
5	Compressed Air System	1	Set	50,000.00	50,000.00		7.5	
6	Testing Equipments + lighting	1	Set	1,50,000.00	1,50,000.00		10	
7	Manual Forklifts 5 Tons capacity & 3 Miter elevation	2	Set	1,00,000.00	2,00,000.00			
8								
9								
10								
11								
12								
13								
	Total-Sum	**8**			**39,00,000.00**			
	Grand Total				**1,88,50,000.00**		**283.5**	KW

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Preliminary List of Machines and Equipment, Noise Levels

All machines are maintained below recommended noise levels.

In principle it 1s assumed that the land will be bought, and building will be constructed.

The Land & building cost estimate is as below: -

LAND & DEVELOPMENT all Amount in INR Lacs							Land	
WB Standard							40	Mtr
							41.82	Mtr
	Acre	Bigha	Sq Mtr	Sq Ft	RATE / Bigha	AMOUNT		
LAND COST	0.25	1.25	1673	18000	3.00	3.75		
- Compound wall & fencing							Shed	
-compound wall @	Running Metre Rs.	Height Mtr	Total Length of Wall mtrs				20	Mtr
	0.05	3	167.29			8.36	30	Mtr
levelling & filling				ACRES	0.94	1.17		
-Paving				ACRES	0.14	0.02	.@10% land paved	
- External Drainage, water drains,	0.01		250.93	RM		2.51		
Land scaping				ACRE	3	0.2475		
	Total					16.06		

1		Acre=	5	Bigha	WB
1		Katha=	720	Sq Ft	
20		Katha=	1	Bigha	
1		Bigha=	14400	Sq Ft	
1		Sq Mtr=	10.76	Sq Ft	
1		Bigha=	1338.29	Sq Mtr	
1		Acre=	6691.45	Sq Mtr	
1		Acre=	72000	Sq Ft	
3		Acre=	216000	Sq Ft	
3		Acre=	20074.34944	Sq Mtr	
3		Acre=	15	Bigha	

B	BUILDINGS						
	PARTICULARS		DIMENSION		AREA IN	RATE PER	TOTAL
			LENGTH	WIDTH	SQ.Mtr	SQ.Mtr	AMOUNT
			IN R.MTR.	IN R.MTR.		(Rs.)	s.in lacs)
1	MAIN ENTRANCE GATE					L.S	5
	AND SECURITY BUILDING & ENCLOSURES.						
2	ADMINISTRATION,ACCOUNTS,				40	10000	4
3	COVERED AREA FOR COMPLETE PLANT				560	10,000	56
							0
							0
							0
4	WAREHOUSE				50	1,000	0.5
5	RAW MATERIAL				100	1,000	1
6	FINISHED GOODS				200	1,000	2
7	SUBSTATION				100	1,000	1
	GRAND TOTAL						**69.5**

The following equipment must be provided if the building is not satisfactorily equipped with the following items:

- ✓ Steel structure and steel supporting unless specified in the supplies.
- ✓ High tension (HT). low tension {LT) cables. HT/LT transformers. Equipment and lighting distribution system.
- ✓ Water pumping station and distribution
- ✓ Firefighting system

Warranty

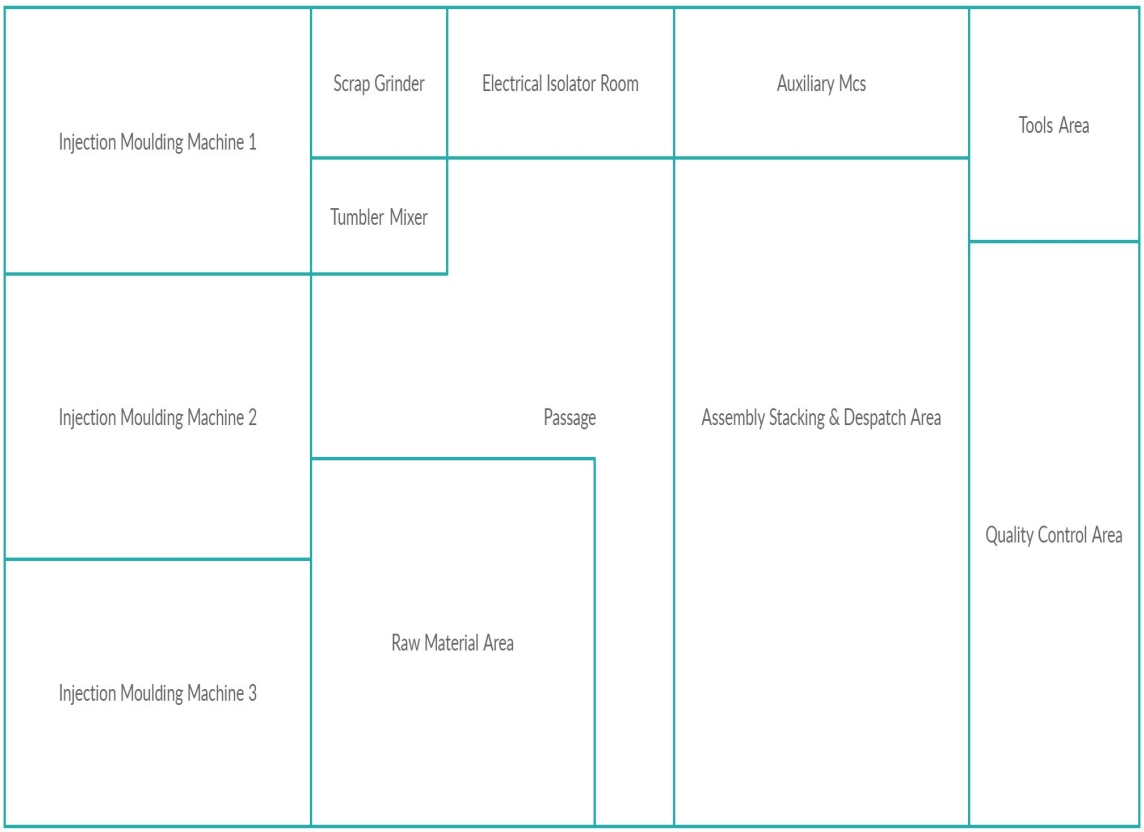
All purchased equipment will be covered by supplier's standard warranty clause unless specified separately.

Civil works.

Description of civil works.

Construction will be done as per estimate given in the above calculation.

A tentative layout of the production plant. the administration and social facilities are given in fig. below.



Layout drawing.

The total area sums up to 600 m2.

Civil engineering works.

Rental Cost

Based on interviews with real estate brokers, the estimated monthly rental rate of a production building in India varies from INR 25 per sq ft to INR 125 per sq ft depending upon the place where the unit is likely to be put up. Since the owner will always try to keep the cost at minimum, we have considered to provide with rental cost with a monthly rental of INR 25 per sq ft for 6,000 sq ft covered area which works out to INR 1,50,000/- per month as rental.

Plant Organization & Manpower.

Personnel requirements.

The total number of personnel required for this project is given in the chart below with break up and their salaries with perks.

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Commercial and technical overheads

SALARIES & ALLOWANCES				
	For all 3 Shifts		in Lacs	
DESIGNATION	NO	REMUN/ANNUM	PERKS @30%	TOTAL
GENERAL MANAGER	1	5,00,000	1,50,000	7
IMM DEPT				
PRODUCTION MANAGER	0	0	0	0
SHIFT ENGINEER	1	3,00,000	90,000	4
SHIFT OPERATORS	3	2,00,000	60,000	8
PRODUCTION HELPERS	3	1,00,000	30,000	4
LOADING	3	80,000	24,000	3
Assembly Department				
Assembly Helpers	4	1,00,000	30,000	5
Stacking & Despatch Department				
Stacking & Despatch helpers	4	1,00,000	30,000	5
STORES				
STORES MANAGER	0	0	0	0
STORE KEEPERS	1	1,80,000	54,000	2
DESPATCH STAFF	1	1,30,000	39,000	2
QUALITY CONTROL & TESTING				
INCHARGE	1	4,50,000	1,35,000	6
INSPECTORS	2	3,00,000	90,000	8
GENERAL MC MAINTENANCE	1	1,80,000	54,000	2
GENERAL MOULD MAINTENANCE	1	1,80,000	54,000	2
OFFICE EXECUTIVES				
PURCHASE & COMMERCIAL	0	2,50,000	75,000	0
ACCOUNTS	1	2,50,000	75,000	3
ADMINISTRATION	1	2,50,000	75,000	3
OFFICE STAFF	1	1,80,000	54,000	2
SALES & MARKETING	1	1,80,000	54,000	2
SECURITY STAFF	3	1,00,000	30,000	4
TOTAL	33			69

Salaries & Social charges as above.

Training.

Training Program.

General remark

The staff of workers of the factory will be trained in different groups. The envisaged training programme is the effective way of transferring both technology and know-how. An experienced manager of the equipment supplier will be nominated to take overall charge of the training programme and trainees.

Training scope

Selection of staff for training will call for considerable care since trainees will be required:

- to learn a language

- to master technical and practical tasks

- to pass this knowledge on the others

Selection recommendations

Special care will be needed since trainees will have to master both language and -technical training.

Therefore, all trainees should have a good working knowledge of their own spoken and written language.

They should also be tested for their capacity in speaking at least English.

In more general terms we recommend the following which would be applied in normal selection:

- Intelligence and attitude for learning

- Health and hygiene - good average physique, not allergic to dust

- Full use of all senses - sight, smell, hearing, etc.

- Motivation to learn and get things done

- Piratical/mechanical abilities

- Ability to lead and handle people

- Any specific knowledge helpful to a factory e.g. machinery, instruments, goods

Drying, planning, organising.

Number to be trained

In accordance with our experience, the following personnel should be trained:

1 no Production technical manager

3 nos Moulding operator

1 no Assembling and packing machine

1 no Process maintenance

1 no Moulds maintenance

1 no General Mc Maintenance

Training abroad

Not required in this case.

Basic training:

The basic training consists of a review of all aspects of factory operation and provides a general knowledge of all machinery and equipment.

Specialist training:

This is a detailed training for specific tasks. Not everyone will do everything. Different suppliers will cover training on their machines only. All trainings will be at client's factory.

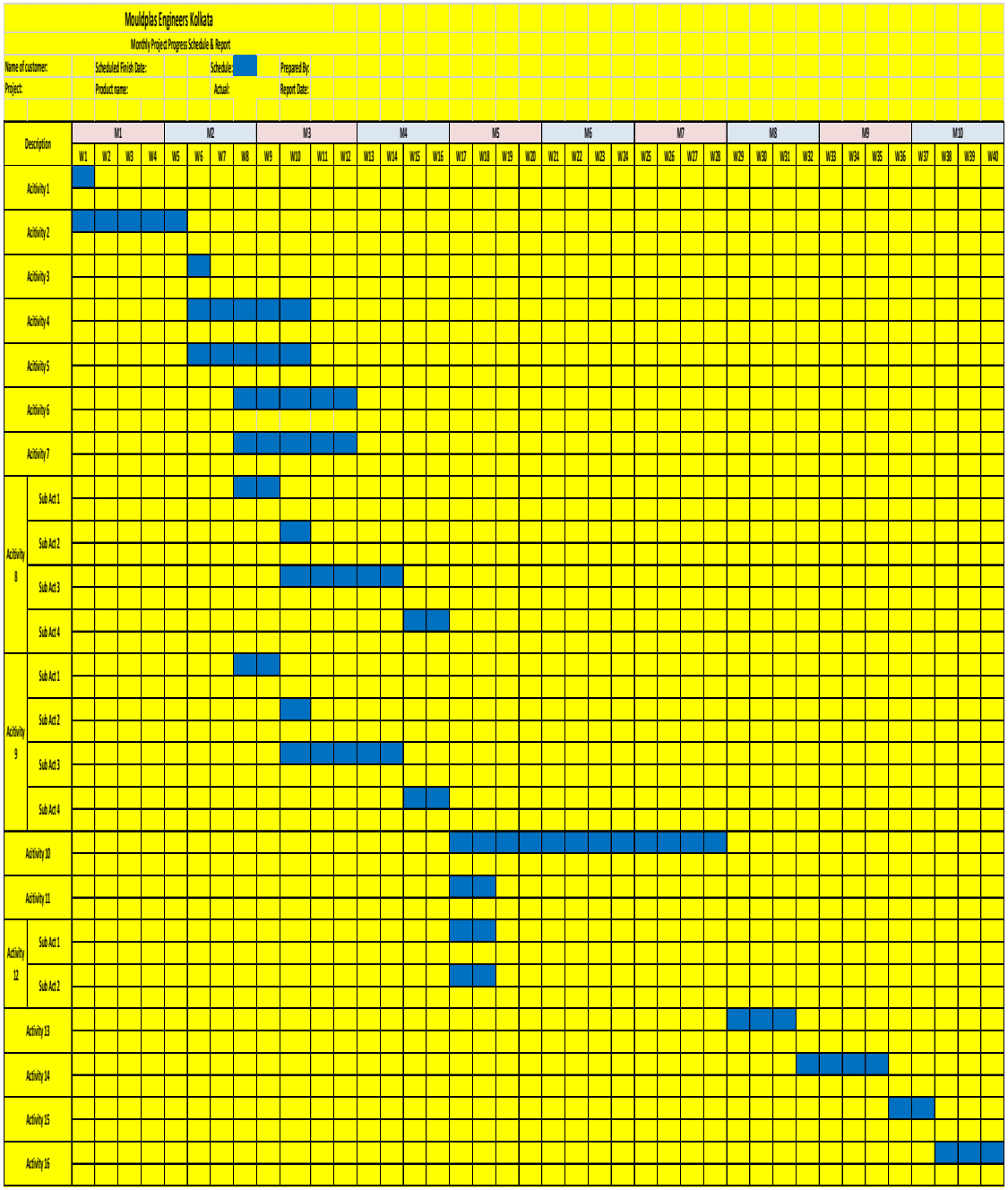
Training cost.

No cost. All free to client. This needs to be negotiated with suppliers in advance before placement of order on them.

Project Implementation schedule.

The total project implementation period is estimated at 06 months after the order is placed and down payment to supplier made.

The project implementation schedule is presented in Fig. 7.1 below.



Project Implementation Schedule Chart

Fig. 7 .1 : Project Implementation Schedule

Cost & revenue estimates.

Total initial investments

The initial fixed assets comprise the total fixed investment and the pre-production capital expenditures.

INITIAL INVESTMENT COST (Lacs INR)

Sr. No.	Cost Items	Local Cost	Foreign Cost	Total Cost	% Share
1	**Fixed investment**				
1.1	Land	16.06		16.06	2.17
1.2	Building and civil work	69.50		69.50	9.38
1.3	Machinery and equipment	188.50		188.50	25.45
1.4	Utilities	48.50		48.50	6.55
1.5	Misc Fixed Assets	11.50		11.50	1.55
	Sub -total	**334.06**	**0.00**	**334.06**	**45.11**
2	**Pre operating cost ***				

2.1	FINANCIAL & ADMIN COST	29.18	0.00	29.18	3.94
2.2	CONTINGENCY @2.5%	7.95	0	7.95	1.07
2.3	TECHNICAL KNOWHOW	5.00	0	5.00	0.68
	Subtotal	**42.13**	**0.00**	**42.13**	**5.69**
3	**Working capital for 3 months running ****	364.40		364.40	49.20
	Grand Total	**740.59**	**0.00**	**740.59**	**100.00**

** N.B Pre operating cost include project implementation cost such as installation, start-up, commissioning,*

project engineering, project management etc and capitalized interest during construction.

*** The total working capital required at full capacity operation is INR 364.40 Lacs for 3 months.*

During the production, the working capital requirement will be financed by funds to be generated internally. Working capital loan will be financed separately.

Total fixed investment.

The chart below gives the calculation of this.

COST OF THE PROJECT			
	Rs.in lakhs		
		APPROPRIATED AMT	GROSS BLOCK
LAND & SITE DEVELOPEMENT	16.06	19.54	35.61
BUILDINGS - PARK & THEMING	69.50	84.58	154.08
PLANT & MACHINERY	188.50	229.39	417.89
UTILITIES	48.50	59.02	107.52
MISC.FIXED ASSETS	11.50	13.99	25.49
PREL. & PRE-OP. EXPNS			
FINANCIAL & ADMIN COST	29.18		
TECHNICAL KNOWHOW	5.00		
WORKING CAPITAL 3 MONTHS	364.40		
CONTINGENCY @2.5%	7.95		
TOTAL	740.59	406.53	740.59
Say	741		

Pre-production capital expenditure as above.

Working capital requirements.

WORKING CAPITAL MONTHS		3	364.40

Depreciation & Amortization.

Depreciation Schedule (as per Income Tax Act)

Written Down Value Method

Rs. in Lacs

Particulars	Original Cost	Dep 2020-21	WDV	Dep 2021-22	WDV	Dep 2022-23	WDV	Dep 2023-24	WDV	Dep 2024-25	WDV
Land & site Development.	35.61	1.78	33.82	1.78	32.04	1.78	30.26	1.78	28.48	1.78	26.70
Building & Civil works	154.08	15.41	138.67	13.87	124.80	12.48	112.32	11.23	101.09	10.11	90.98
Plant & Machinery	417.89	125.37	292.52	87.76	204.77	61.43	243.34	73.00	170.34	51.10	119.24
Furniture & Fixtures	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
Office Equipment	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
	633.07	**145.11**	**487.96**	**105.70**	**382.27**	**77.76**	**404.51**	**87.87**	**316.64**	**64.66**	**251.97**

Particulars	WDV	Dep 2025-26	WDV	Dep 2026-27	WDV	Dep 2027-28	WDV	Dep 2028-29	WDV	Dep 2029-30	WDV
Land & site Development.	26.70	1.78	24.92	1.78	23.14	1.78	21.36	1.78	19.58	1.78	17.80
Building & Civil works	90.98	9.10	81.88	8.19	73.69	7.37	66.33	6.63	59.69	5.97	53.72
Plant & Machinery	119.24	135.77	93.46	28.04	65.43	19.63	45.80	163.74	-117.94	-35.38	-82.56
Furniture & Fixtures	7.53	0.75	6.77	0.68	6.10	0.61	5.49	0.55	4.94	0.49	4.44
Office Equipment	7.53	0.75	6.64	0.66	5.98	0.60	5.38	0.54	4.84	0.48	4.36
	251.97	**148.15**	**213.69**	**39.35**	**174.34**	**29.98**	**144.35**	**173.24**	**-28.88**	**-26.65**	**-2.23**

Compilation of operational input cost.

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Raw Material and Inputs	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
Utilities	65	65	65	65	65	65	65	65	65	65
Maintenance and repair	22	24	26	28	30	32	34	37	40	43
Labour direct	69	74	80	86	92	99	107	115	123	133
Administration Costs	39	42	45	48	52	56	60	65	69	75
Cost of marketing and distribution & Misc Exps	19	21	22	24	26	28	30	32	35	37
Total Operating Costs	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**
Depreciation	71	62	55	48	42	37	33	29	25	23
Cost of Finance	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
Total Production Cost	**1,644**	**1,782**	**1,777**	**1,773**	**1,771**	**1,775**	**1,786**	**1,800**	**1,815**	**1,833**
Item wise cost Break up/Pc										
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64

Raw material, operating & utilities supplies.

H	RAW MATERIAL						
	Per month	Kg	Qty Pcs	Rate in INR	Total in lacs		
1	HDPE Granules	84,546.05		96	81.16	Any make 20 MFI or more	
2	Handles 5 Ltr		90,000	10	9	Outsourced.	
3	Handles 10 Ltr		1,40,000	14	19.6	Outsourced.	
4	Masterbatch	4,227.30		140	5.92	Any make suitable to above Injection grade. 5% max consumption of HDPE volume.	
	Total :-				**115.68**		
Considering Wastage/Reject/Scrap @		5%	Of total Raw Material Cost				5.78
Total Cost of Raw Material Per Month.							**121.47**

UTILITIES CONSUMPTION & COST

Sr. No.	Description	Annual Consumption	UOM	Unit Cost (INR)	Cost ('000 INR)	Total Connected Load in KW	Running Load is 40%	Running hour/Annum 7200	So KWh Consumed/year
1	Electricity	8,16,480	kWh	8	65.32	283.5	113.4		8,16,480
2									
	Total Annual Cost				65.32				

Personnel requirements.

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SALARIES & ALLOWANCES

For all 3 Shifts — in Lacs

DESIGNATION	NO	REMUN/ANNUM	PERKS @30%	TOTAL
GENERAL MANAGER	1	5,00,000	1,50,000	7
IMM DEPT				
PRODUCTION MANAGER	0	0	0	0
SHIFT ENGINEER	1	3,00,000	90,000	4
SHIFT OPERATORS	3	2,00,000	60,000	8
PRODUCTION HELPERS	3	1,00,000	30,000	4
LOADING	3	80,000	24,000	3
Assembly Department				
Assembly Helpers	4	1,00,000	30,000	5
Stacking & Despatch Department				
Stacking & Despatch helpers	4	1,00,000	30,000	5
STORES				
STORES MANAGER	0	0	0	0
STORE KEEPERS	1	1,80,000	54,000	2
DESPATCH STAFF	1	1,30,000	39,000	2
QUALITY CONTROL & TESTING				
INCHARGE	1	4,50,000	1,35,000	6
INSPECTORS	2	3,00,000	90,000	8
GENERAL MC MAINTENANCE	1	1,80,000	54,000	2
GENERAL MOULD MAINTENANCE	1	1,80,000	54,000	2
OFFICE EXECUTIVES				
PURCHASE & COMMERCIAL	0	2,50,000	75,000	0
ACCOUNTS	1	2,50,000	75,000	3
ADMINISTRATION	1	2,50,000	75,000	3
OFFICE STAFF	1	1,80,000	54,000	2
SALES & MARKETING	1	1,80,000	54,000	2
SECURITY STAFF	3	1,00,000	30,000	4
TOTAL	33			69

Non-labor maintenance and spares, Administrative overheads, and distribution as above.

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Sales prices & Annual revenue projection.

MOULDED BUCKETS Size Ltr.	INR Cost of Production / Pc	INR Selling Price / Pc	INR Profit / Pc
	0.00	0.00	0.00
5	46.06	60.00	13.94
10	76.48	90.00	13.52

NET PROFIT	203	245	237	237	228	354	314	299	321	256
in % of sales revenue	10	11	11	11	11	16	15	14	15	12
CUMMULATIVE CASH	203	449	685	922	1151	1504	1819	2118	2439	2695
INCOME FROM [in Lacs INR]	year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10

Average DSCR	2.36		
Break Even Percentage	70%	2021-22	
ROI	2.50	Years	
Internal Rate of Return	99%		
CASH SURPLUS	203.37	2021-22	If production starts in 2020-21

Financial Analysis.

Debt Service Coverage Ratio (DSCR)

Debt Service Coverage Ratio (DSCR)								
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
					(Rs. in Lakhs)			
	Source							
1	Profit after Tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83
2	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54
3	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
4	**TOTAL (1+2+3)**	**360.70**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**
	Deployment							
5	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
6	Loan Repayment	111.09	111.09	111.09	111.09	111.09	0.00	0.00
7	**TOTAL(5+6)**	**157.33**	**147.33**	**137.33**	**127.34**	**117.34**	**0.00**	**0.00**
8	**DSCR(4/7)**	**3.25**	**3.53**	**3.37**	**3.28**	**3.11**		
	Average DSCR	**2.36**						

*** What does a high debt service coverage ratio indicate?
Typically, a DSCR greater than 1 means the entity—whether an individual, company, or government —has sufficient income to pay its current debt obligations

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Breakeven Point.

Breakeven Point Calculation 1										
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1720.08	1722.16	1725.13	1729.08	1737.83	1753.95	1771.27	1789.90	1809.92
Break Even Percentage	**81%**	**80%**	**80%**	**80%**	**80%**	**80%**	**81%**	**82%**	**83%**	**84%**

Breakeven Point Calculation 2										
	When Cash Surplus of last year is reinvested into business every year									
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1516.72	1476.88	1488.40	1492.05	1509.56	1400.28	1456.89	1490.86	1489.04
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	**255.89**
Break Even Percentage	**81%**	**70%**	**68%**	**69%**	**69%**	**70%**	**65%**	**67%**	**69%**	**69%**

The **break-even point** will **increase when** the amount of fixed costs and expenses **increases**.

In other words, if a greater proportion of lower contribution margin products are sold, the break-even point will increase. (Contribution margin is selling price

Here we are talking about buckets which are low margin high volume sales products.

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Calculation of Income Tax Payable.

Calculation of Income Tax Payable										
Description	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
Profit as per P&L A/c.	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
Adjusted profit		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: Depreciation as Per P&L Account	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
	370.90	439.92	437.84	434.87	430.92	422.17	406.05	388.73	370.10	350.08
Less: Depreciation as Per IT	145.11	105.70	77.76	87.87	64.66	148.15	39.35	29.98	173.24	-26.65
Profit before tax	225.80	334.22	360.09	346.99	366.25	274.02	366.70	358.74	196.86	376.73
Profit as per act	225.80	334.22	360.09	346.99	366.25	274.02	366.70	358.74	196.86	376.73
Income tax	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
Tax payable	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
Total tax Payable	**56.45**	**83.55**	**90.02**	**86.75**	**91.56**	**68.50**	**91.68**	**89.69**	**49.22**	**94.18**

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INTERNAL RATE OF RETURN (IRR).

INTERNAL RATE OF RETURN (IRR)											
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						(Rs. in Lakhs)					
1	**Total Project Cost**	**740.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2	Profit after tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	3459.47
3	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
4	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
	Net Cash Flow (2+3+4) - 1	**-379.90**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**	**299.04**	**320.88**	**233.26**
	Internal Rate of Return	**99%**									

***	The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero.
	In other words, it is the expected compound annual rate of return that will be earned on a project or investment.
	In the calculation above , an initial investment has a 99% IRR. That is equal to earning a 99% compound annual growth rate.

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INTEREST CALCULATION.

INTEREST CALCULATION												
PROJECT COST	740.59											
EQUITY	185.15											
DEBT	555.44											
INTEREST RATE	9.00%											
REPAYMENT PERIOD IN YRS	5											
INTEREST CALC QRTRLY		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	YEAR6	YEAR7	YEAR 8	YEAR 9	YEAR 10	YEARXI
	QRTR1											
OPENING BALANCE		555	444	333	222	111	0	0	0	0	0	0
INTEREST		12	10	7	5	2	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28		0		0		0
CLOSING BALANCE		528	417	305	194	83	0	0	0	0	0	0
	QRTR2											
OPENING BALANCE		528	417	305	194	83	0	0	0	0	0	0
INTEREST		12	9	7	4	2	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		500	389	278	167	56	0	0	0	0	0	0
	QRTR3											
OPENING BALANCE		500	389	278	167	56	0	0	0	0	0	0
INTEREST		11	9	6	4	1	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		472	361	250	139	28	0	0	0	0	0	0
	QRTR4											
OPENING BALANCE		472	361	250	139	28	0	0	0	0	0	0
INTEREST		11	8	6	3	1	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		444	333	222	111	0	0	0	0	0	0	0
YEARLY REPAYMENT												
PRINCIPAL		111	111	111	111	111	0	0	0	0	0	0
INTEREST		46	36	26	16	6	0	0	0	0	0	0
TOTAL		157	147	137	127	117	0	0	0	0	0	0

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Calculation of Depreciation.

Calculation of Depreciation													
Description of Asset	Value	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total Dep	WDV
Land & Site Developt.	35.61	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	17.80	17.80
Buildings	154.08	7.70	7.32	6.95	6.61	6.27	5.98	5.68	5.39	5.13	4.87	61.90	92.18
Plant & Machinery	417.89	58.50	50.31	43.27	37.21	32.00	27.52	23.67	20.36	17.51	15.05	325.41	92.48
Additions					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
								0.00	0.00	0.00	0.00	0.00	0.00
											0.00	0.00	0.00
Sub total													
Furniture & Fixtures	12.75	2.10	1.77	1.48	1.25	1.05	0.88	0.74	0.62	0.52	0.44	10.85	1.90
Office Equipment	12.75	1.27	1.15	1.03	0.93	0.84	0.75	0.68	0.61	0.55	0.49	8.30	4.44
Total	633.07	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64	424.26	208.81
Value of assets	633.07	561.70	499.38	444.86	397.08	355.14	318.23	285.68	256.92	231.44	208.81		

Rates of Depreciation(%)	
Buildings & Civil works	5
Plant & Machinery	14
Furniture & Fixtures	16
office Equipment	10

Land & Site Development is written off over the period of 20 YEARS

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Ten years P&L statement.

VIABILITY STATEMENT										
					(Rupees in lakhs)					
INCOME FROM	year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5 Ltr.	583	648	648	648	648	648	648	648	648	648
10 Ltr.	1,361	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512
TOTAL INCOME	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
EXPENSES										
RAW MATERIALS										
Total	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
SALARIES	69	74	80	86	92	99	107	115	123	133
POWER	65	65	65	65	65	65	65	65	65	65
REPAIR & MAINT	22	24	26	28	30	32	34	37	40	43
ADMIN EXP	39	42	45	48	52	56	60	65	69	75
MISCELLANEOUS	19	21	22	24	26	28	30	32	35	37
TOTAL	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
GROSS PROFIT	417	476	464	451	437	422	406	389	370	350

VIABILITY STATEMENT CONTD.										
	Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
	1	2	3	4	5	6	7	8	9	10
INTEREST ON LOAN	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
DEPRECIATION	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
PBT	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
TAX	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
PAT	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	233.26
CASH AVAILABLE	314.45	356.36	347.82	348.12	339.35	353.67	314.38	299.04	320.88	255.89
LOAN REPAYMENT	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	255.89
CUMMULATIVE CASH	203.37	448.64	685.37	922.40	1150.67	1504.33	1818.71	2117.75	2438.64	2694.53

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Depreciation Schedule (as per Income Tax Act)

Depreciation Schedule (as per Income Tax Act)											
Written Down Value Method											
								Rs. in Lacs			
	Original	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV
Particulars	Cost	2020-21		2021-22		2022-23		2023-24		2024-25	
Land & site Development.	35.61	1.78	33.82	1.78	32.04	1.78	30.26	1.78	28.48	1.78	26.70
Building & Civil works	154.08	15.41	138.67	13.87	124.80	12.48	112.32	11.23	101.09	10.11	90.98
Plant & Machinery	417.89	125.37	292.52	87.76	204.77	61.43	243.34	73.00	170.34	51.10	119.24
Furniture & Fixtures	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
Office Equipment	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
	633.07	**145.11**	**487.96**	**105.70**	**382.27**	**77.76**	**404.51**	**87.87**	**316.64**	**64.66**	**251.97**
	WDV	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV
Particulars		2025-26		2026-27		2027-28		2028-29		2029-30	
Land & site Development.	26.70	1.78	24.92	1.78	23.14	1.78	21.36	1.78	19.58	1.78	17.80
Building & Civil works	90.98	9.10	81.88	8.19	73.69	7.37	66.33	6.63	59.69	5.97	53.72
Plant & Machinery	119.24	135.77	93.46	28.04	65.43	19.63	45.80	163.74	-117.94	-35.38	-82.56
Furniture & Fixtures	7.53	0.75	6.77	0.68	6.10	0.61	5.49	0.55	4.94	0.49	4.44
Office Equipment	7.53	0.75	6.64	0.66	5.98	0.60	5.38	0.54	4.84	0.48	4.36
	251.97	**148.15**	**213.69**	**39.35**	**174.34**	**29.98**	**144.35**	**173.24**	**-28.88**	**-26.65**	**-2.23**

Additionally, in tabular format following is provided together for better financial understanding of the project.

Total Initial Investment cost.

Project Name :-	MOULDED BUCKETS Manufacturing
Capacity per month	2,30,000
3.1 Base Proposal	(Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)

COST OF THE PROJECT			
	Rs.in lakhs		
		APPROPRIATED	GROSS BLOCK
LAND & SITE DEVELOPEMENT	16.06	19.54	35.61
BUILDINGS - PARK & THEMING	69.50	84.58	154.08
PLANT & MACHINERY	188.50	229.39	417.89
UTILITIES	48.50	59.02	107.52
MISC.FIXED ASSETS	11.50	13.99	25.49
PREL. & PRE OP. EXPNS			
FINANCIAL & ADMIN COST	29.18		
TECHNICAL KNOWHOW	5.00		
WORKING CAPITAL 3 MONTHS	364.40		
CONTINGENCY @2.5%	7.95		
TOTAL	740.59	406.53	740.59
Say	741		

Investment during production. **Same as above.**

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Internal Rate of Return IRR of the project

INTERNAL RATE OF RETURN (IRR)											
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						(Rs. in Lakhs)					
1	**Total Project Cost**	**740.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2	Profit after tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	3459.47
3	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
4	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
	Net Cash Flow (2+3+4) - 1	**-379.90**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**	**299.04**	**320.88**	**233.26**
	Internal Rate of Return	**99%**									

***	The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero.
	In other words, it is the expected compound annual rate of return that will be earned on a project or investment.
	In the calculation above , an initial investment has a 99% IRR. That is equal to earning a 99% compound annual growth rate.

Total production cost.

PRODUCTION COST (in Lacs INR)										
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Raw Material and Inputs	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
Utilities	65	65	65	65	65	65	65	65	65	65
Maintenance and repair	22	24	26	28	30	32	34	37	40	43
Labour direct	69	74	80	86	92	99	107	115	123	133
Administration Costs	39	42	45	48	52	56	60	65	69	75
Cost of marketing and distribution & Misc Exps	19	21	22	24	26	28	30	32	35	37
Total Operating Costs	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**
Depreciation	71	62	55	48	42	37	33	29	25	23
Cost of Finance	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
Total Production Cost	**1,644**	**1,782**	**1,777**	**1,773**	**1,771**	**1,775**	**1,786**	**1,800**	**1,815**	**1,833**
Item wise cost Break up/Pc										
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64

Production cost for each product.

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Items	**Gms/Pc**	**Total Production /Yr**										Weight %
		90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
5 Ltr.	170.20	972000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	0.28
10 Ltr.	439.59	1512000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	0.72
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**		
5 Ltr.	459	497	496	495	494	495	499	502	507	511		
10 Ltr.	1185	1285	1281	1278	1277	1279	1288	1298	1309	1321		
Total :-	1644	1782	1777	1773	1771	1775	1786	1800	1815	1833		
INR/Pc	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**		
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36		
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64		

Working capital required.

H	RAW MATERIAL						
	Per month	Kg	Qty Pcs	Rate in INR	Total in lacs		
1	HDPE Granules	84,546.05		96	81.16	Any make 20 MFI or more	
2	Handles 5 Ltr		90,000	10	9	Outsourced.	
3	Handles 10 Ltr		1,40,000	14	19.6	Outsourced.	
4	Masterbatch	4,227.30		140	5.92	Any make suitable to above Injection grade. 5% max consumption of HDPE volume.	
	Total :-				**115.68**		
Considering Wastage/Reject/Scrap @		5%	Of total Raw Material Cost				5.78
Total Cost of Raw Material Per Month.							**121.47**

Working Capital for 3 months = 121.47 x 3 = 364.41 lacs INR.

Sources of finance.

MEANS OF FINANCE			
PROMOTER'S CONTRIBUTION		185.15	
TERM LOAN		555.44	
Grand Total		740.59	

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Cashflow table.

CASH FLOW FOR FINANCIAL MANAGEMENT (in Lacs INR)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Scrap sales
TOTAL CASH INFLOW	**741**	**1,944**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**100**
Inflow funds	741	0	0	0	0	0	0	0	0	0	0	0
Inflow operation	0	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	0
Other income	0	0	0	0	0	0	0	0	0	0	0	100
TOTAL CASH OUTFLOW	**941**	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**	**0**
Increase in fixed assets	551	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	364.40	0	0	0	0	0	0	0	0	0	0	0
Operating costs	25.49	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810	0
Marketing and Distribution cost	0	0	0	0	0	0	0	0	0	0	0	0
Income tax	0	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18	0
Financial costs	0	46	36	26	16	6	0	0	0	0	0	0
Loan repayment	0	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00	0
SURPLUS (DEFICIT)	**-741**	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**	**100**
CUMULATIVE CASH BALANCE	**0**	**203**	**449**	**685**	**922**	**1,151**	**1,504**	**1,819**	**2,118**	**2,439**	**2,695**	**2,795**

Net income statement.

INCOME STATEMENT (in LACS INR)										
Item	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Sales revenue	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
Less variable costs	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
VARIABLE MARGIN	**417**	**476**	**464**	**451**	**437**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	21	22	21	21	20	20	19	18	17	16
Less fixed costs	111	111	111	111	111	0	0	0	0	0
OPERATIONAL MARGIN	**306**	**365**	**353**	**340**	**326**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	16	17	16	16	15	20	19	18	17	16
Financial costs	46	36	26	16	6	0	0	0	0	0
GROSS PROFIT	**260**	**329**	**327**	**324**	**320**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	13	15	15	8	8	14	14	15	15	16
Income (corporate) tax	56	84	90	87	92	69	92	90	49	94
NET PROFIT	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**
in % of sales revenue	10	11	11	11	11	16	15	14	15	12
CUMMULATIVE CASH	**203**	**449**	**685**	**922**	**1151**	**1504**	**1819**	**2118**	**2439**	**2695**

All the calculations as mentioned above will be attached here as annexure in pdf format for your kind perusal.

MOULDPLAS ENGINEERS
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PLASTICS MOULDED HOUSEHOLD USE BUCKET MANUFACTURING PROJECT REPORT

27.60 Lacs Pieces Per Annum Production considered for 5 Litre & 10 Litre @ PA 10.80 Lacs & 16.80 Lacs pieces, respectively.

ABSTRACT

Plastics Processing is a sunrise industry in India. The PR gives you a total insight of Indian Plastics household molding industry and its profitability calculation. Under the present turbulent scenario if you are looking to invest into manufacturing of Plastics molded buckets then this is the right tool for you. Crafted well by a three decades experience holding Plastics machinery & Mould professional for serving all relevant information on a platter. So do not look elsewhere, just go for it!

AMITAVA SANYAL
Author

MOULDPLAS ENGINEERS

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Anatomy Of Plastics Bucket

1. The Bucket Body Moulded with Plastic Granules in Injection Moulding process.

2. The Metal handle with plastic Grip which is outsourced.

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10 Additionally, in tabular format following will be provided together for better financial understanding of the project.

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1. Summary.

General: -

HDPE buckets are around in Indian market for as many as 30 years now and the usage and demand for these are ever increasing as many new areas of applications are arising over the years so as its volume and thus demand.

Since most of the households and other facilities in India today finds the usage of moulded HDPE buckets extremely useful, the demand for the same has been increasing over the years by leaps & bounds. Thanks to the rising demand and easy availability of raw material, many industries of various sizes are coming up at various parts of India. Even then it is still not adequate and hence, the idea of putting up an industry to produce HDPE moulded bucket has been conceived and decision at management level is taken to study the minimum feasible capacity and various project parameters so to arrive at a point to take a decision to invest.

The project idea in this case is to have a production facility capable to manufacture @ **27,60,000** buckets per year & the total comprising below mix.

- **5 Litre** buckets **@ 10,80,000** pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum

In the following table the estimated local market volumes and the anticipated production and sales are presented for the period 2021 to 2034. India is a big country. In this case we have just considered few districts in any Eastern Indian state and thus tried to arrive at a figure based on available information.

Table 1: Market and sales volumes 2021-2034 of the future plant (In Lacs pieces per year)

Year	Local Market volume		Local sales	
Litre	**5**	**10**	**5**	**10**
2020	121	146	9.72	15.12
2021	127.1	153.3	10.8	16.8
2022	133.4	161	10.5	17.1
2023	122	169	10.3	17.3
2024	128.1	177.5	10.0	17.6
2025	134.5	186.3	9.8	17.8
2026	123	195.7	9.5	18.1
2027	129.2	205.4	9.3	18.3
2028	135.6	215.7	9.0	18.6
2029	124	226.5	8.8	18.8
2030	130.2	237.8	8.5	19.1
2031	136.7	249.7	8.3	19.3
2032	125	262.2	8.0	19.6
2033	131.3	275.3	7.8	19.8
2034	137.8	289.1	7.5	20.1

Location:

The location of the project could be any tier 1, tier 2 or tier 3 cities/towns/ village in India placed anywhere in the country. Conditions will remain same in industrially developed states whereas in other backward areas government support & subsidies will be attractive.

The detailed location-based project report can be made against specific charges.

Engineering:

The engineering of the plant, the technical lay-out and the equipment selection is based upon the technical concept prepared by MPE of Kolkata, India.

The proposed plant will produce the plastic HDPE moulded buckets of 5 & 10 Litres to start with and later will make other sizes too as the business grows. The metal handles will be outsourced initially whereas at next stage there is possibility of offering buckets with plastic moulded handles too.

The production is subdivided into 4 sections i.e.:

- Moulding department.
- Handles assembly department.
- Quality control & Testing department.
- Stacking, Storage & despatch department.

The manufacturing process commences with the moulding of the plastic parts. i. e. HDPE bucket bodies of 5 Litres and 10 Litres. The moulded parts are then stacked and transported to the adjacent Handles assembly department wherein the holes are made manually by labour and handles are fixed on each

bucket. The buckets according to their colour and size are sorted and stacked separately inside one another up to a predetermined height at the stacking & storage department.

Then the quality control guy comes and inspects and checks for quality standard as per prescribed procedure. Once approved and cleared the consignment is despatched to the customers by truck with proper care taken for loading & transportation to the customer.

Cost and Revenue Estimates:

The following table depicts the total initial investment cost of the project.

Project Name :-	**MOULDED BUCKETS Manufacturing**		
Capacity per month	**2,30,000**		
3.1 Base Proposal (Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)			
COST OF THE PROJECT			
	Rs.in lakhs		
		APPROPRIATED	**GROSS BLOCK**
LAND & SITE DEVELOPEMENT	**16.06**	**19.54**	**35.61**
BUILDINGS - PARK & THEMING	**69.50**	**84.58**	**154.08**
PLANT & MACHINERY	**188.50**	**229.39**	**417.89**
UTILITIES	**48.50**	**59.02**	**107.52**
MISC.FIXED ASSETS	**11.50**	**13.99**	**25.49**
PREL. & PRE OP. EXPNS			
FINANCIAL & ADMIN COST	**29.18**		
TECHNICAL KNOWHOW	**5.00**		
WORKING CAPITAL 3 MONTHS	**364.40**		
CONTINGENCY @2.5%	**7.95**		
TOTAL	**740.59**	**406.53**	**740.59**
Say	**741**		

Table: Total Initial Investment in INR

Break-Down of Total Production Costs Covering a Normal Production Year

PRODUCTION COST (in Lacs INR)										
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Raw Material and Inputs	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
Utilities	65	65	65	65	65	65	65	65	65	65
Maintenance and repair	22	24	26	28	30	32	34	37	40	43
Labour direct	69	74	80	86	92	99	107	115	123	133
Administration Costs	39	42	45	48	52	56	60	65	69	75
Cost of marketing and distribution & Misc Exps	19	21	22	24	26	28	30	32	35	37
Total Operating Costs	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**
Depreciation	71	62	55	48	42	37	33	29	25	23
Cost of Finance	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
Total Production Cost	**1,644**	**1,782**	**1,777**	**1,773**	**1,771**	**1,775**	**1,786**	**1,800**	**1,815**	**1,833**
Item wise cost Break up/Pc										
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64

Table: Total Production Costs In INR

Sales Revenues:

Item	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Sales revenue	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
Less variable costs	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
VARIABLE MARGIN	**417**	**476**	**464**	**451**	**437**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	21	22	21	21	20	20	19	18	17	16
Less fixed costs	111	111	111	111	111	0	0	0	0	0
OPERATIONAL MARGIN	**306**	**365**	**353**	**340**	**326**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	16	17	16	16	15	20	19	18	17	16
Financial costs	46	36	26	16	6	0	0	0	0	0
GROSS PROFIT	**260**	**329**	**327**	**324**	**320**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	13	15	15	8	8	14	14	15	15	16
Income (corporate) tax	56	84	90	87	92	69	92	90	49	94
NET PROFIT	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**
in % of sales revenue	10	11	11	11	11	16	15	14	15	12
CUMMULATIVE CASH	**203**	**449**	**685**	**922**	**1151**	**1504**	**1819**	**2118**	**2439**	**2695**

Table: Sales revenues 2020 - 2030 (in INR per year)

	INR	INR	INR
MOULDED BUCKETS Size Ltr.	**Cost of Production / Pc**	**Selling Price / Pc**	**Profit / Pc**
	0.00	**0.00**	0.00
5	**46.06**	**60.00**	13.94
10	**76.48**	**90.00**	13.52

Financial Prospect Analysis:

Debt Service Coverage Ratio(DSCR)								
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
					(Rs. in Lakhs)			
	Source							
1	Profit after Tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83
2	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54
3	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
4	**TOTAL(1+2+3)**	**360.70**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**
	Deployment							
5	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
6	Loan Repayment	111.09	111.09	111.09	111.09	111.09	0.00	0.00
7	**TOTAL(5+6)**	**157.33**	**147.33**	**137.33**	**127.34**	**117.34**	**0.00**	**0.00**
8	**DSCR(4/7)**	**3.25**	**3.53**	**3.37**	**3.28**	**3.11**		
	Average DSCR	**2.36**						
***	What does a high debt service coverage ratio indicate?							
	Typically, a DSCR greater than 1 means the entity—whether an individual, company, or government							
	—has sufficient income to pay its current debt obligations							

Table: Results of Financial Analysis

MOULDPLAS ENGINEERS

PR no: - Sample for Website_

6 September 2020

Breakeven Point Calculation 1										
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1720.08	1722.16	1725.13	1729.08	1737.83	1753.95	1771.27	1789.90	1809.92
Break Even Percentage	**81%**	**80%**	**80%**	**80%**	**80%**	**80%**	**81%**	**82%**	**83%**	**84%**

Breakeven Point Calculation 2										
	When Cash Surplus of last year is reinvested into business every year									
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1516.72	1476.88	1488.40	1492.05	1509.56	1400.28	1456.89	1490.86	1489.04
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	**255.89**
Break Even Percentage	**81%**	**70%**	**68%**	**69%**	**69%**	**70%**	**65%**	**67%**	**69%**	**69%**

The **break-even point** will **increase when** the amount of fixed costs and expenses **increases**.
In other words, if a greater proportion of lower contribution margin products are sold,
the break-even point will increase. (Contribution margin is selling price

Here we are talking about buckets which are low margin high volume sales products.

Table: Results of Financial Analysis

INTERNAL RATE OF RETURN (IRR)											
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						(Rs. in Lakhs)					
1	**Total Project Cost**	**740.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2	Profit after tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	3459.47
3	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
4	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
	Net Cash Flow (2+3+4) - 1	**-379.90**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**	**299.04**	**320.88**	**233.26**
	Internal Rate of Return	**99%**									
***	The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero.										
	In other words, it is the expected compound annual rate of return that will be earned on a project or investment.										
	In the calculation above , an initial investment has a 99% IRR. That is equal to earning a 99% compound annual growth rate.										

Table: Results of Financial Analysis

MOULDPLAS ENGINEERS

PR no: - Sample for Website_

6 September 2020

VIABILITY STATEMENT

(Rupees in lakhs)

INCOME FROM	year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5 Ltr.	583	648	648	648	648	648	648	648	648	648
10 Ltr.	1,361	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512
TOTAL INCOME	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
EXPENSES										
RAW MATERIALS										
Total	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
SALARIES	69	74	80	86	92	99	107	115	123	133
POWER	65	65	65	65	65	65	65	65	65	65
REPAIR & MAINT	22	24	26	28	30	32	34	37	40	43
ADMIN EXP	39	42	45	48	52	56	60	65	69	75
MISCELLANEOUS	19	21	22	24	26	28	30	32	35	37
TOTAL	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
GROSS PROFIT	417	476	464	451	437	422	406	389	370	350

VIABILITY STATEMENT CONTD.

	Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
	1	2	3	4	5	6	7	8	9	10
INTEREST ON LOAN	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
DEPRECIATION	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
PBT	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
TAX	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
PAT	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	233.26
CASH AVAILABLE	314.45	356.36	347.82	348.12	339.35	353.67	314.38	299.04	320.88	255.89
LOAN REPAYMENT	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	255.89
CUMMULATIVE CASH	203.37	448.64	685.37	922.40	1150.67	1504.33	1818.71	2117.75	2438.64	2694.53

Table: Results of Financial Analysis

Conclusion:

Based on the good results of the financial project analysis the implementation of the project, under the same conditions as assumed in the present report, can be recommended.

1. Introduction.

Plastic Buckets have been used in Indian households for over 3 decades. It has earned wide level of acceptance in the society. There are various types and designs of buckets available these days in the market, we are discussing here a project for manufacturing plain HDPE molded buckets with metal handles as that is the most basic bucket used by common Indians. The traditional galvanized iron, aluminum and brass buckets have been to a great extent been replaced by HDPE molded buckets. The important performance characteristics they provide include lightness, being non-breakable, ease in handling, safety in use, resistance to boiling water and chemicals, color variability to match environment and economical cost. The HDPE Buckets are available in the market in various sizes. Generally, we see 5 to 25 Litres being mostly used.

1. Project Idea.

The original project idea is the realisation of a plant for the annual production of 5L buckets 10,80,000pieces per annum & 10 L buckets 16,80,000 pieces per annum to be produced in any part of India. There are many manufacturers for these kinds of buckets already in India at various levels and turnover. But the market for 140 crores Indian are so huge domestically, keeping aside export market for the time being now that the idea of putting up such a manufacturing plant looks lucrative.

The buckets are used in everyday life for various uses and finds its application almost in every Indian household in multiple numbers making its demand very high and because of possibility of making the buckets in various colors and since they weigh very less there is high level of acceptance among the consumers in India.

2. Project History.

There is no such history involved while identifying this project as possible option for investment. However, the investor is likely to conduct a preliminary pre-investment study if not already done covering the points like

- Estimated market size.
- Major importers/distributors.
- Country sources of Moulded buckets
- Historical and projected future demand
- Prices and import tariff if any import now in India.

This pre-investment study if conducted is expected to be specific to an area nearer to the proposed factory as the capacity proposed is not very large and so it is expected to be able to cater to the local consumption completely ruling out the current requirement of sending to distant places.

However, if we consider the current information on the export market then it is limited to indications on the potential of exporting to neighbouring countries or even to African continent and far east markets.

The covid 19 situation throws open fresh opportunities to Indian manufacturers as the existing supply chain has been broken and chances of getting them restored in near future is very remote.

Objective of the Study

The aim of the pre-investment study is

- to assess the market potential to produce moulded bucket in India. i.e.
- to analyse the past and present demand for moulded bucket {5 Litre and 10 Litre} in India.
- to assess the future domestic market potential of moulded bucket {5 Litre and 10 Litre} in India.

- to assess the export potential of moulded bucket {5 Litre and 10 Litre} and their anticipated competition in local and foreign markets with other sources of supply and
- to finalize the technical elements of the project

Market & Plant capacity.

Product Profiles.

Plastic bucket can be found these days in almost every household. Plastic bucket has many uses; some use it for bathing, and some for storing eatable object. Plastic buckets are also used for commercial reason for transportation and packaging. The buckets under consideration here are having two parts. One is the bucket body which is molded out of HDPE granules and the second part is a metal handle which is fitted with molded bucket by two holes on either side of the neck and the handle will have a plastic soft grip in the middle for comfortable holding by hand.

Plastics buckets have made considerable inroad into the overall market for buckets during last 3 decades due to its lower cost, lower weight to volume, wider range of colors and ease of handling

& transport etc. and it is one of the fastest growing market worldwide. Buckets are made of HDPE & PPCP material both and it offers a variety of colours, choices, design etc suiting ever changing demand of the market.

Demand & Market

General Remark:

Prior to analysis of the demand and market in detail, it is helpful to define the terms 'demand' and 'market' regarding the envisaged products. i.e. moulded bucket of various sizes. A market is the set of all actual and potential buyers of a product. whether individuals or organizations. The major markets for the envisaged products, are consumer markets, as retailers, institutions, whole sellers, online platforms, and supermarkets, as well as the private and governmental establishments and others.

The term market demand or shortly demand of a product is the total volume that would be bought by all important defined customer groups, (market segments) in a defined geographical

area. in a defined period, in a defined marketing environment under a defined marketing programme.

The market can be divided into:

Actual Market: which comprises the set of buyers who actually buy the products or will buy these products in the future for the actual uses.

Potential Market: which comprises the set of potential buyers who will buy these products in the future who are actually not yet using these products.

The principal aim of the market analysis is to investigate the domestic market of moulded bucket. However, it is also necessary to check other markets to identify export opportunities.

The information presented in this study is gathered principally from available secondary sources such as trade statistics compilations. Key informant interviews with selected importers/distributors and government agencies were likewise conducted to substantiate/verify data and to obtain better indications of future demand.

Estimated Market size.

Approximate present size of demand, Its past growth, major determinants & Indicators.

As per available market reports the consumption of total HDPE Injection Moulded material for manufacturing household items including buckets in India was 498 KTA in 2016-17 having growth rate @ 9 % CAGR. The consumption of HDPE Injection Moulded Items in India had been 134 Kilo Tons during the year 2004-05. However, the moulded buckets and mugs are fast moving items. The growth rate and demand are envisaged on an average of 11 – 12 percent per annum.

Whereas PPCP is also another material used these days to manufacture the buckets and as per report available the material consumption in injection moulding household segment has been 1640 KTA with a growth rate of 13% CAGR in the year 2016-17.

Projected future demand.

In accordance with the Working Group Report on Petrochemicals, Ministry of Chemicals & Fertilizers, the demand of total HDPE Injection Moulded items including buckets in India is stated to be 2400 Kilo Tones by 2017-18 having growth rate @ 16%. However, the moulded buckets and mugs are fast moving items. The growth rate and demand are envisaged on an average 11 – 12 percent per annum.

Prices & Import tariff.

The bucket is such a product which is a volume-based business. As there is demand in every part of the society so as its manufacturers. There are many manufacturers of plastics bucket ranging from small to big. As the manufacturer sets up an industry, he will generally start with Two or three machines and once he settles down and grows the no of machines will increase.

So, it is a business in a price conscious consumer market, and one has to be sure to manufacture with least cost so to remain competitive and thus grow.

The market in India itself is so big that until we talk about a very large set up producing very high quantity and variety, there is no point in thinking about the export market. The producer will have no time to export with a smaller set up as domestic demand will consume all his produce in no time.

India is not importing any plastic bucket at present. So, question of considering import tariff is ruled out in this case.

Export market potential.

Unless we talk about a very high investment set up with multiple number of machines, the export market

for plastic moulded bucket may not be explored as domestic demand is quite high and increasing at high rate.

Sales Forecast.

Anticipated competition.

The competition will be from large and small players both. There are two types of producers in the business of plastic bucket manufacturing. The branded supplier and the unbranded supplier. There is also a premium product segment and a low-end segment. All are having their own market share and customer.

Depending upon the business plan the entrepreneur decides to have, the competitors will change, and their number will vary. So, it is a very dynamic market but very competitive market as well specially when Indian buyers have a reputation of being very price conscious.

Localization of Market.

The proposed plant under investigation would deliver its products to private and governmental agencies, retailers, whole sellers and likes. This will also deliver to online platforms and supermarkets & malls.

The main market will be the most populated tier 2 & tier 3 cities and remote villages in the vicinity as metro cities are already flooded with supplies made from various manufacturers nearby.

Sales Program.

It has initially been planned by the investor to produce

- 5 Litre buckets @ 10,80,000 pieces per annum
- 10 Litre buckets @ 16,80,000 pieces per annum

because this production seemed to be easily marketable regarding to the number and size of moulded bucket, as well as the minimum economic size of a moulded bucket production plant. However. the results of the market investigations indicated a higher market volume for these sizes of moulded bucket in the India than anticipated. Consequently, it was recommended,

and accepted by the investor, to also include the production of other sizes within 6 months of starting commercial production.

Since the 20 Litre moulded bucket have a market volume of about 30 % it is decided that the production programme should be extended by this size.

From a technical point of view, it can be stated that the injection moulding machines are equipped with tools to change the moulds. No changes in conceptual engineering of the plant would be necessary. Only the scope of supply has to be extended by moulds for the production of 20 Litre moulded bucket.

Estimated annual Sales revenues.

Price is the only element in the marketing mix that produces revenues; the other elements represent costs.

Therefore, to set a price is a problem which must be carefully considered, first. when a newly established company has to introduce its product onto the market where these products already are offered.

While market demand might set a ceiling and costs set a floor to pricing, the following analyses of competitors prices will help to establish where the prices might be set.

The price must principally be somewhere between one that is too low to produce a profit and one that too high to produce any demand.

Figure below summarizes these major considerations in price setting.

Fig.: Major Considerations in Setting a Price

Low Price				High Price
Loss	No loss no profit			
No Possible profit at this price.	Product Cost	Competitor Prices & Price of Substitutes.	Unique product features	No Possible demand at this price.

Production costs set a floor to the price. Competitors prices are known and so provide an orientation point that the company will have to consider in setting its selling price.

Estimated annual cost for sales promotion & Marketing.

One of the definitions of marketing is the following:

'Marketing is getting the right goods and services to the right people at the right place at the right time at the right price with the right communication and promotion'.

Although the direct market for the envisaged products are commercial and institutional customers. it is obvious that marketing must be done with regard to the needs of the end-user (consumer).

Marketing generally comprises the strategic-conceptional aspects of selling, whereas selling is very often done in a separate sales department.

For smaller companies marketing and sales department can be concentrated in one department.

Sales promotion consists of a wide variety of promotional tools designed to stimulate earlier and/or stronger market response.

They include tools for:

- ✓ consumer promotion (samples. Discount, premiums. etc.)
- ✓ trade promotion (buying allowances. free goods, advertising. etc.) and
- ✓ sales-force promotion (bonuses. contests, etc.)

All marketing and sales promotion efforts have one common thing; they cost money.

Concerning the marketing of moulded buckets (including sales promotion) the marketing and sales promotion cost have been estimated and reflected in the project report.

Determination of plant capacity.

Feasible nominal plant capacity.

To find an optimum plant capacity, is of greatest importance for project profitability. The increase of plant capacity is very often a good measure to reduce production costs. since investment cost and other fixed costs are not increased in direct proportion of plant capacity.

On the contrary the market size must be taken into consideration and may require reducing the plant capacity to the smallest economically feasible plant size. as it is the case of the projected plant.

The nominal capacity of the projected plant which corresponds to the smallest economically feasible plant has been fixed at **27,60,000** buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000**pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum

Concerning the envisaged type of products - pertaining to all types of usage segment, special attention must be paid to the fulfilment of quality requirements by GMP (Good Manufacturing Practices).

These GMP are also of highest importance for project profitability. The sales targets even at relatively small capacities can only be reached if high quality products are produced and a constant high-quality level can be assured to the customers over long periods.

Quantitative relationship between Sales, plant capacity & material output.

The sales of the future plant are based on the following schedule of realisation until full production at nominal capacity:

2020: Design. delivery. erection and commissioning of the plant

2021: First year of operation (at 90% of nominal capacity}. Correspond to a production of

- **5 Litre** buckets **@ 9,72,000** pieces per annum
- **10 Litre** buckets **@ 15,12,000** pieces per annum

2022: Second year of operation (at 100 % of normal capacity). Correspond to a production of

- **5 Litre** buckets **@ 10,80,000**pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum

2023 - 2034: Full operation in accordance with nominal capacity.

The theoretical market volumes and the Correspond to the sales of **5 Litre** buckets **@ 10,80,000** pieces per annum & **10 Litre** buckets **@ 16,80,000** pieces per annum of the future plant are presented in table below.

Table Market and sales volumes 2020-2034 of the future plant (in Lacs pieces per year)

Year	Local Market volume		Local sales	
Litre	**5**	**10**	**5**	**10**
2020	121	146	9.72	15.12
2021	127.1	153.3	10.8	16.8
2022	133.4	161	10.5	17.1
2023	122	169	10.3	17.3
2024	128.1	177.5	10.0	17.6
2025	134.5	186.3	9.8	17.8
2026	123	195.7	9.5	18.1
2027	129.2	205.4	9.3	18.3
2028	135.6	215.7	9.0	18.6
2029	124	226.5	8.8	18.8
2030	130.2	237.8	8.5	19.1
2031	136.7	249.7	8.3	19.3
2032	125	262.2	8.0	19.6
2033	131.3	275.3	7.8	19.8
2034	137.8	289.1	7.5	20.1

The local market volumes up to 2023 correspond to the projected future demand. From 2023 up to 2034 an AAGR (average annual growth rate} of 5 % has been assumed.

As a result of these considerations the nominal capacity of the future plant is defined as follows:

27,60,000 buckets per year, total comprising below mix.

- 5 Litre buckets @ 10,80,000 pieces per annum
- 10 Litre buckets @ 16,80,000 pieces per annum.

This is with an assumption that 10-Litre bucket production will be more profitable in the long run than 5 Litre buckets. Considering no capacity increase except one more mold if planned.

Materials & Inputs.

Raw Materials & Operating supplies.

The following materials are necessary to produce moulded bucket:

Raw material:	HDPE.
Semi-finished products:	Bucket metal handles with plastic grip.
Auxiliary materials	NIL

All the above materials are available in India in sufficient quantity.

Raw material & construction specifications

- Bucket body is moulded from HDPE (High Density Polyethylene)

The material must correspond to the IS: 3730 (1984) Specification, the Indian specification for moulded bucket. or to equivalent standards. Mother specification for the HDPE buckets apply to IS 2828 – 1964*.

Material - The buckets shall be molded from natural or colored HDPE. The HDPE used for injection molding of buckets shall be of grade 45 MA or 54 MA (see IS: 7328-1974) or equivalent.

If the buckets are to be used for temporary storage of food articles, then the basic resin and other additives shall conform to IS: 10146-1982 or amendments later.

The handles will be rigid and made from metal, coated metal, or HDPE. Where metal handles are used, they will be corrosion resistant. If they are injection moulded then, then HDPE to be used of grades 45 MA or 54 MA or equivalent as per IS 7328-1992 & AMD 2 2009.

The Buckets to have smooth surface finish without any blemishes. Any spruce [stalk] shall be neatly removed by milling or by cutting. The buckets shall be free from moulding flash.

Material detailed specification to be as below: -

Characteristics of the HDPE grade to use			
Property	***Test Method***	***Unit***	***Value***
MFI 9190 Deg C/ 2.16 Kg)	ASTM D 1238	gm/10 min	20
Density (23 Deg C)	ASTM D 1505	gm/cc	0.95
Tensile strength @ yield	ASTM D 638	Mpa	22
Elongation @ Yield	ASTM D 638	%	12
Flexural modulus.	ASTM D 790	Mpa	900
Notched Izod impact test	ASTM D 256	J/M	30
Vicat softening point	ASTM D 1525	Deg C	123

Rough estimates of annual costs of raw materials and operating supplies

The unit price estimates are presented in the following Table below.

Table: Unit price estimates for raw material, semi-finished products and auxiliary materials for moulded bucket production

UNIT PRICE ESTIMATES	
Designation	*Unit price*
	INR/ UNIT
HDPE	96 / KG
HANDLE 5 LITRE	10/PC
HANDLE 10 LITRE	14/PC
Colour Masterbatch	140/KG

The estimates of annual raw material and operating supplies costs are presented in Tables separately.

Table Raw materials and operating supplies costs per piece of 5 Litre buckets in INR and corresponding annual costs.

INR/Pc	**Year 2**
5 Litre.	46.06
10 Litre.	76.48

Planned production at a normal year of production: 10,80,000 pieces.

Corresponding raw materials and operating supplies costs: 4,97,44,800/- INR/year.

Table: Raw materials and operating supplies costs per piece of 10 Litre buckets In INR and corresponding annual costs.

INR/Pc	Year 2
5 Litre.	46.06
10 Litre.	76.48

- Planned production at a normal year of production: 16,80,000 pieces.

Corresponding raw materials and operating supplies costs: 12,84,86,400/- INR/year.

Utilities.

Electricity

The electricity high tension power supply rate in India varies from state to state. However, experience says that the rates per kwh consumed for a 11 KV 3 Phase 50 Hz connection for 1000 KW installed load hovers between INR 7 to 9 per kwh consumed.

So, depending upon the area where the factory is going to be put up, the power cost will be applicable. For the sake of calculating the cost the average rate of INR 8 per kwh has been taken in this calculation.

The following link of Torrent Power Gujarat state rate will be useful to understand power tariff in India as a good reference which is reproduced below:-

https://www.gercin.org/wp-content/uploads/2019/08/TPL-D-A-Tariff-Schedule-FY-2017-18.pdf

Water

Water for any area in India is either provided by the Local Water Utilities Administration at a very nominal charge or the unit itself arrange for water supply in house.

Just to understand the prevailing rate in vatva industrial area Gujarat India for understanding, the official release of association says that for 51 metric tons of water consumed per day the monthly charge is approx. INR 21,000/- per month for industrial water supply via a 25 mm ferule supply pipe.

Here also similar rate is considered for production cost calculation.

Location & Site.

Economic & social background of business in India.

The following tables characterize the economic (Table 4.1) and social (Table 4.2) climate in India.

Table: Economic Indicators of the India

ECONOMIC INDICATORS:	India			
August 26, 2020				
Inflation. Growth			Forecast	
	2018	2019	2020	2021
GDP Growth Rate [%/Yr]	6.10%	4.20%	-4.00%	5%
Inflation Rate [%/Yr]	3.40%	4.80%	3%	4.00%

Source: - ADB bank

ECONOMIC INDICATORS OF INDIA:

Main Indicators	2017	2018	2019 (e)	2020 (e)	2021 (e)
GDP *(billions USD)*	2,652.25	2,718.73e	2,935.57	3,202.18	3,509.65
GDP *(Constant Prices, Annual % Change)*	7.2	6.1	4.2	-4.5	6.0
GDP per Capita *(USD)*	2,014e	2,038e	2,172	2,338	2,529
General Government Balance *(in % of GDP)*	-6.8	-6.6	-7.4	-7.0	-7.0
General Government Gross Debt *(in % of GDP)*	67.832	68.053	69.043	68.524	67.747
Inflation Rate *(%)*	3.6	3.4	4.5	3.3	3.6
Current Account *(billions USD)*	-48.66	-57.18	-57.81	-73.54	-80.45
Current Account *(in % of GDP)*	-1.8	-2.1	-1.1	-0.6	-1.4

Source: IMF – World Economic Outlook Database - Latest available data. Note: (e) Estimated Data

Specific site for the project.

The site of the project can be anywhere in India. But one has to keep good connectivity, close to place of residence, possibility of selling entire products to be manufactured in the nearer market, favourable industrial policy and good infrastructure, availability of manpower, electricity, good road connectivity,

no history of labour unrest in the area are some of the basic requirements which needs be considered before selection of a project site.

Project Engineering.

Conceptual Engineering of the proposed plant.

The engineering of the plant, the technical lay-out and the equipment selection is based upon the technical expertise provided by any good experienced person either hired by customer or from customer's own network or contact or family as the case may be. This could even be the customer himself in case he is well acquainted with the proposed project.

The plant will be devised for an annual production of

27,60,000 buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000** pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum.

The proposed plant will produce the plastic parts of the moulded buckets, whereas the metal handles will be outsourced.

The production is subdivided into 4 sections. i. e.:

- 5 Litres & 10 Litres moulded buckets moulding.
- Assembly of Handles with the bucket body.
- Quality Control Department.
- Stacking of finished bucket & despatch.

The manufacturing process commences with the moulding of the plastic buckets on injection moulding machines.

The moulded buckets are then fitted with outsourced metal handles and then stacked upon one another as per size and colour and then despatched by carrier vehicle to the customer's place.

Technology & Equipment.

Department Description

Molding department.

As mentioned previously, the buckets will be moulded in this department. Therefore, the size of the machine yard and dies will be selected accordingly.

The raw material (HDPE) in granules must conform to the required Indian standard and be accompanied by a certificate which guarantees its suitability for this specific use.

The plastic granulate is brought to melting point and then injected into the dies. The machine will be programmed so that opening occurs only after the moulded parts become solidified.

Department Sizing

The sizing of the plant is based on the following parameters:

300 working days/year with 3 daily shifts for a total of 7,200 hours/year

Three nos Injection moulding machines of 350 Tons each with separate moulds 10 Litre & 5 Litre buckets have been considered. Also, an average of 18 seconds cycle time for 5 Litre mould & 24 Seconds for 10 Litre moulds have been considered.

All three are single cavity moulds for both 5 & 10 Litre buckets.

The above parameters make a total of following number of buckets per year.

27,60,000 buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000**pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum.

To avoid water wastage, moulds cooling, a closed cooling water circuit has been provided.

Assembling department.

This is the place where we do the most labour intensive operation of the project. The labour force use a small bench top fixture to cut two holes at the neck of the bucket 180 degrees apart in line. These holes will hold the metal handles firmly.

Now here the labour fixes metal handles to individual buckets.

Stacking, Quality control, Packing & Dispatch department.

Now since the buckets are ready it is stacked on the floor at designated places till allowed height in order of size and color being produced and kept ready for dispatch.

There is no special requirement for buckets to pack. While loading on the trucks, it is ensured that they are well covered by thick plastic films or woven clothes or tarpaulins so to protect them from everything during transit.

It is the department from where the loaded trucks are dispatched to the customers.

Auxiliary Equipment.

Compressed air system

The compressed air system is designed to supply the compressed air necessary to the whole factory.

Product Specification

Compressor Type	Reciprocating Air Compressor
Discharge Pressure (in bar)	4 bar
Compressor Brand	Any good Indian Brand.
Power Source	AC Three Phase
Number of Compression Stages	Single Stage
Horsepower (HP)	10 HP
Maximum Flow Rate (in cfm)	21 - 50 cfm
Lubrication Style	Oil Free

Scrap Grinder.

A grinder machine for in house scrap grinding & to be fed to injection moulding machine further to be installed and the detailed specification is as below:-

630 mm x 630 mm mouth opening will ensure that all standard size buckets can be easily fed and crushed.

Model No.	MPEG 2525-26-400
Power (hp)	25/30/40
Rotating Diameter(mm)	400
Inlet size (mm)	630x630
RPM	760
Rotary blades(pcs)	. 3/4/6
Stationary blades(pcs)	. 2/4
Capacity(kg/hr)	300-400
Weight kgs	2300
LxWxH	75"x60"x96"

Diesel Generator Set

A diesel genset of 400 KVA to install for backup power in case of a power cut.

Tumbler Mixer

A 100 kgs per batch tumbler mixer to install for mixing of masterbatches/colour with resin.

Transport of materials

The transportation of various goods inside. for loading and unloading, from warehouse to departments, is undertaken by the following vehicles:

2 nos manual fork-lifts with a capacity of at least 5 tons and 3-meter elevation.

Shelving.

The method to be adopted for warehousing goods needs to be known in order to determine the arrangement and installation of the shelving. The material will be divided into the following sections:

- ✓ Moulds for moulding department
- ✓ Raw material store

Regarding all other materials, these may be stored on pallets.

Spare Parts.

For all parts normally used and for items largely employed. a quantity of spares to guarantee the operation of all machinery for a period of 2 years will be procured and stored properly.

Rough estimate of technology cost.

License for know-how and Patent

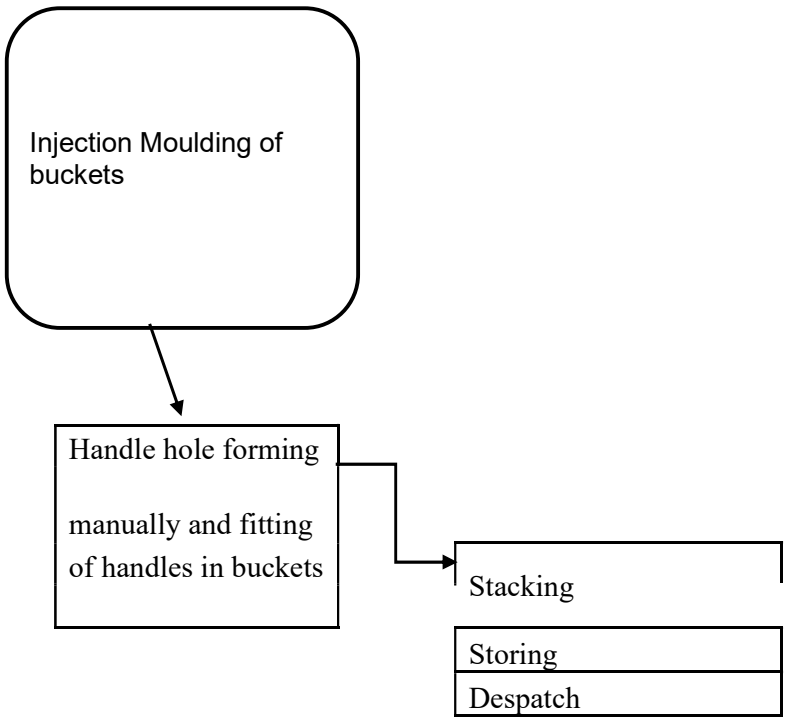
The fee if agreed with any service proving firm for license & patent if any to be quantified in advance and paid in due course.

Basic engineering

The basic engineering fee for this project if any as would be agreed upon to be paid upon its getting due.

Flow of production & quality control.

Flow of production.



flow chart.

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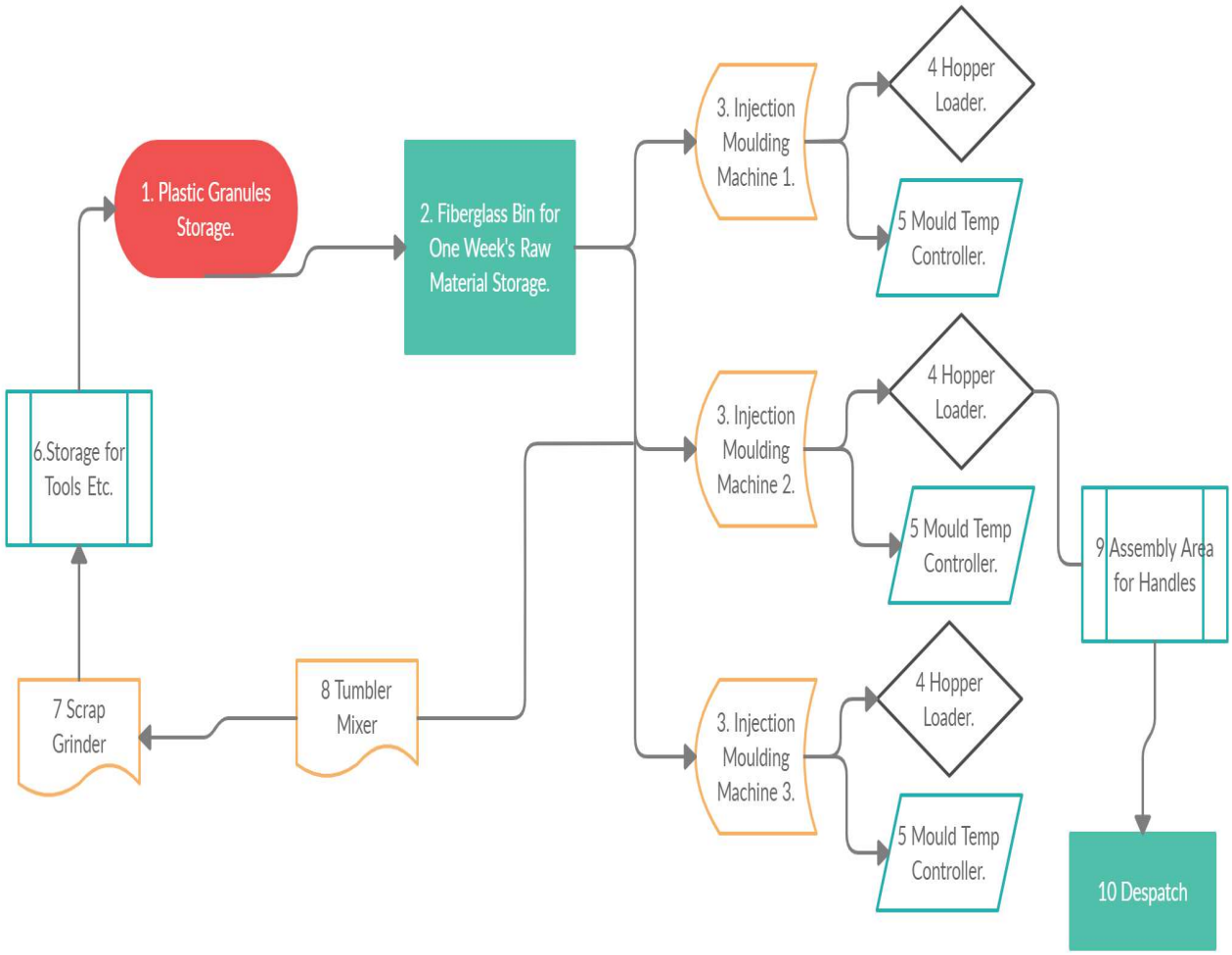
PLANT FLOW-SHEET DETAILS



1. Storage for plastic raw materials.
2. Fibreglass bin containing the plastic material required for 1-week consumption.
3. Injection moulding machines for plastic material.
4. Automatic hopper Loader.
5. Automatic mould temperature controller.
6. Storage for tools etc
7. Grinder machine
8. Tumbler mixer.
9. Assembly area for handles.
10. Stacking & despatch area.

The raw material used is HDPE in granule form & will be supplied in bags of 25 kgs.

The material is conveyed into the hoppers of the presses used for moulding. In the first section the following items are produced:

- ✓ 10 Litre bucket body in two numbers Injection moulding machines.
- ✓ 5 litre bucket body in one number Injection moulding machine.

The products made on this machine will be separately forwarded to the assembly department.

Care should be taken with these products to ensure that it does not encounter with any type of impurity/dirt. A simple means of ensuring this could be a clean & dirt-free factory environment with clean concrete flooring.

The Products move to the assembly area where the handles are put in place and then in the stacking area the buckets are kept one inside the other with inverted position up to a predetermined height inside the factory storage area and then despatched with proper care & covering when put on truck.

Quality control.

Production control

A systematic control of production is necessary particularly at the key points. A fundamental control is to be carried out on moulded buckets concerning the surface finish, colour, gloss and smooth surface with flash or any defects or short moulding.

The fitting of the handles, its grip and tightness also to be checked once assembled.

The laboratory tests which must be affected on some randomly picked up bucket from a lot to ensure it conforms to the prescribed standard.

The quality requirements are laid down in the following IS-standards.

IS: 2828-1964 / IS : 7328-1974 / IS : 10146-1982 / IS : 10141-1982 / IS : 2530-1963 / IS : 4905-1968

Laboratory Analyses

TESTING OF POLYETHYLENE BUCKETS

A-I. DISTORTION TEST

A-1.0 Outline of the Method –

Distortion test is carried out by hanging a bucket filled with water at 60°C and then determining the increase in diameter and depth of the bucket.

A-I.1 Procedure - Suspend the bucket by its handle at the center from a double hook, the arms of which are approximately 75 mm apart (see Fig. 1). Measure the diameter d of top at right angles to handle (including spout, if any) and depth h from rim to bottom of bucket. Pour-water at 60°C until it is

filled to a level of 25 mm from the rim. After five minutes, measure d and h, and report the increase in dimensions as percentage of the initial dimensions.

A-2. OVERLOAD TEST

A-2.0 Outline of the Method - Overload test is carried out by hanging a bucket filled with specified load for a specified period and then examining for any break or detachment of the handle.

A-2.1 Procedure - Suspend the bucket as prescribed in A-1.1. Pour into the bucket lead shots or any other suitable material of a mass equal to twice that of the water required to fill the bucket. Examine the bucket or handle for any break or detachment of the handle from the bucket at either side after 30 minutes.

High density polyethylene (HDPE) buckets are being produced in large quantities in India.

The main advantages possessed by these buckets are low mass, unbreak ability, ease in handling, safety in use, resistance to boiling water and resistance to most of the chemicals. This standard is intended to serve as a guide in assisting the manufacturers to upgrade the quality of buckets currently produced in the country and the Committee responsible for its preparation has taken special care to see that the consumers' interest is fully protected.

Fore more details on quality norms and standard to follow one has to refer the ***IS : 7328-1974.***

Equipment list.

The equipment is designed for the production of **27,60,000** buckets per year, total comprising below mix.

- **5 Litre** buckets **@ 10,80,000** pieces per annum
- **10 Litre** buckets **@ 16,80,000** pieces per annum.

in 300 working days at three working shifts of eight hours.

The plant uses only Made in India equipment.

Preliminary list of machines and equipment Installed power.

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				Hrs	Days	Per Month		
2.2	3.1 Base Proposal (Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)			22	25	550	Hrs	
No.	**Description**	**Q'ty**		**Unit Price**	**Total Amount**	**Remark**	Power KW	
A	**Injection Moulding Machine-**							
1	Injection Molding Machine- 5 Ltr Bucket (350tons)	3	Set	46,00,000.00	1,38,00,000.00	3-shfit	186	350 Tons
2						3-shift		
3						3-shift		
	Total-Sum	**3**			**1,38,00,000.00**			
B	**Molds**							
1	HDPE Bucket Single cavity mould for 5 Ltr.	1	Set	3,50,000.00	3,50,000.00	3-shift		
2	HDPE Bucket Single cavity mould for 10 Ltr.	2	Set	4,00,000.00	8,00,000.00	3-shift		
3								
4								
5								
6								
7								
8								
9								
	Total-Sum	**3**			**11,50,000.00**			
C								
1		0	Set		0.00			
2		0	Set		0.00			
3		0	Set		0.00			
		0			**0.00**			
D								
1		0	Set		0.00			
2		0	Set		0.00			
3		0	Set		0.00			
		0			**0.00**			
E								
1		0	Set		0.00			
2		0	Set		0.00			
3		0	Set		0.00			
		0			**0.00**			
F								
1		0	Set		0.00			
		0			**0.00**			
G								
1		0	Set		0.00			
2		0	Set		0.00			
		0			**0.00**			
H	**Utility Equipment for Injection Molding Machine**							
1	Grinder 25 inch x 25 inch mouth opening	1	Set	4,50,000.00	4,50,000.00		30	
2	Tumbler Mixer 100 Kgs per Batch	1	Set	2,00,000.00	2,00,000.00		10	
3	Diesel Generator Set 400 KVA	1	Set	18,50,000.00	18,50,000.00			((kw/thyris
4	Cooling Water Supply+cooling Tower + Chilling Plant	1	LS	10,00,000.00	10,00,000.00		40	
5	Compressed Air System	1	Set	50,000.00	50,000.00		7.5	
6	Testing Equipments + lighting	1	Set	1,50,000.00	1,50,000.00		10	
7	Manual Forklifts 5 Tons capacity & 3 Miter elevation	2	Set	1,00,000.00	2,00,000.00			
8								
9								
10								
11								
12								
13								
	Total-Sum	**8**			**39,00,000.00**			
	Grand Total				**1,88,50,000.00**		**283.5**	KW

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Preliminary List of Machines and Equipment, Noise Levels

All machines are maintained below recommended noise levels.

In principle it 1s assumed that the land will be bought, and building will be constructed.

The Land & building cost estimate is as below: -

LAND & DEVELOPMENT all Amount in INR Lacs							Land	
WB Standard							40	Mtr
							41.82	Mtr
	Acre	Bigha	Sq Mtr	Sq Ft	RATE / Bigha	AMOUNT		
LAND COST	0.25	1.25	1673	18000	3.00	3.75		
- Compound wall & fencing							Shed	
-compound wall @	Running Metre Rs.	Height Mtr	Total Length of Wall mtrs				20	Mtr
	0.05	3	167.29			8.36	30	Mtr
levelling & filling				ACRES	0.94	1.17		
-Paving				ACRES	0.14	0.02	.@10% land paved	
- External Drainage, water drains,	0.01		250.93	RM		2.51		
Land scaping				ACRE	3	0.2475		
	Total					16.06		

1		Acre=	5	Bigha	WB
1		Katha=	720	Sq Ft	
20		Katha=	1	Bigha	
1		Bigha=	14400	Sq Ft	
1		Sq Mtr=	10.76	Sq Ft	
1		Bigha=	1338.29	Sq Mtr	
1		Acre=	6691.45	Sq Mtr	
1		Acre=	72000	Sq Ft	
3		Acre=	216000	Sq Ft	
3		Acre=	20074.34944	Sq Mtr	
3		Acre=	15	Bigha	

B	BUILDINGS						
	PARTICULARS		DIMENSION		AREA IN	RATE PER	TOTAL
			LENGTH	WIDTH	SQ.Mtr	SQ.Mtr	AMOUNT
			IN R.MTR.	IN R.MTR.		(Rs.)	s.in lacs)
1	MAIN ENTRANCE GATE					L.S	5
	AND SECURITY BUILDING & ENCLOSURES.						
2	ADMINISTRATION,ACCOUNTS,				40	10000	4
3	COVERED AREA FOR COMPLETE PLANT				560	10,000	56
							0
							0
							0
4	WAREHOUSE				50	1,000	0.5
5	RAW MATERIAL				100	1,000	1
6	FINISHED GOODS				200	1,000	2
7	SUBSTATION				100	1,000	1
	GRAND TOTAL						**69.5**

The following equipment must be provided if the building is not satisfactorily equipped with the following items:

- ✓ Steel structure and steel supporting unless specified in the supplies.
- ✓ High tension (HT). low tension {LT) cables. HT/LT transformers. Equipment and lighting distribution system.
- ✓ Water pumping station and distribution
- ✓ Firefighting system

Warranty

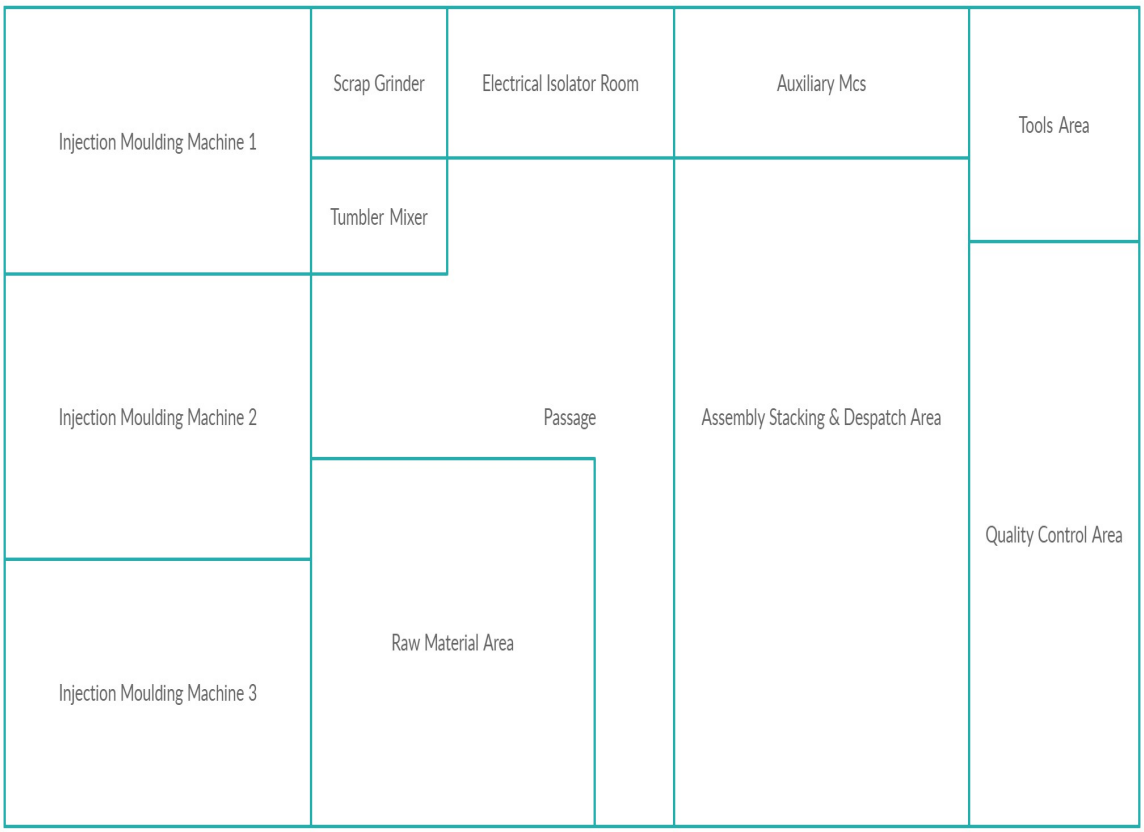
All purchased equipment will be covered by supplier's standard warranty clause unless specified separately.

Civil works.

Description of civil works.

Construction will be done as per estimate given in the above calculation.

A tentative layout of the production plant. the administration and social facilities are given in fig. below.



Layout drawing.

The total area sums up to 600 m2.

Civil engineering works.

Rental Cost

Based on interviews with real estate brokers, the estimated monthly rental rate of a production building in India varies from INR 25 per sq ft to INR 125 per sq ft depending upon the place where the unit is likely to be put up. Since the owner will always try to keep the cost at minimum, we have considered to provide with rental cost with a monthly rental of INR 25 per sq ft for 6,000 sq ft covered area which works out to INR 1,50,000/- per month as rental.

Plant Organization & Manpower.

Personnel requirements.

The total number of personnel required for this project is given in the chart below with break up and their salaries with perks.

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Commercial and technical overheads

SALARIES & ALLOWANCES				
	For all 3 Shifts		in Lacs	
DESIGNATION	NO	REMUN/ANNUM	PERKS @30%	TOTAL
GENERAL MANAGER	1	5,00,000	1,50,000	7
IMM DEPT				
PRODUCTION MANAGER	0	0	0	0
SHIFT ENGINEER	1	3,00,000	90,000	4
SHIFT OPERATORS	3	2,00,000	60,000	8
PRODUCTION HELPERS	3	1,00,000	30,000	4
LOADING	3	80,000	24,000	3
Assembly Department				
Assembly Helpers	4	1,00,000	30,000	5
Stacking & Despatch Department				
Stacking & Despatch helpers	4	1,00,000	30,000	5
STORES				
STORES MANAGER	0	0	0	0
STORE KEEPERS	1	1,80,000	54,000	2
DESPATCH STAFF	1	1,30,000	39,000	2
QUALITY CONTROL & TESTING				
INCHARGE	1	4,50,000	1,35,000	6
INSPECTORS	2	3,00,000	90,000	8
GENERAL MC MAINTENANCE	1	1,80,000	54,000	2
GENERAL MOULD MAINTENANCE	1	1,80,000	54,000	2
OFFICE EXECUTIVES				
PURCHASE & COMMERCIAL	0	2,50,000	75,000	0
ACCOUNTS	1	2,50,000	75,000	3
ADMINISTRATION	1	2,50,000	75,000	3
OFFICE STAFF	1	1,80,000	54,000	2
SALES & MARKETING	1	1,80,000	54,000	2
SECURITY STAFF	3	1,00,000	30,000	4
TOTAL	33			69

Salaries & Social charges as above.

Training.

Training Program.

General remark

The staff of workers of the factory will be trained in different groups. The envisaged training programme is the effective way of transferring both technology and know-how. An experienced manager of the equipment supplier will be nominated to take overall charge of the training programme and trainees.

Training scope

Selection of staff for training will call for considerable care since trainees will be required:

- to learn a language

- to master technical and practical tasks

- to pass this knowledge on the others

Selection recommendations

Special care will be needed since trainees will have to master both language and -technical training.

Therefore, all trainees should have a good working knowledge of their own spoken and written language.

They should also be tested for their capacity in speaking at least English.

In more general terms we recommend the following which would be applied in normal selection:

- Intelligence and attitude for learning

- Health and hygiene - good average physique, not allergic to dust

- Full use of all senses - sight, smell, hearing, etc.

- Motivation to learn and get things done

- Piratical/mechanical abilities

- Ability to lead and handle people

- Any specific knowledge helpful to a factory e.g. machinery, instruments, goods

Drying, planning, organising.

Number to be trained

In accordance with our experience, the following personnel should be trained:

1 no Production technical manager

3 nos Moulding operator

1 no Assembling and packing machine

1 no Process maintenance

1 no Moulds maintenance

1 no General Mc Maintenance

Training abroad

Not required in this case.

Basic training:

The basic training consists of a review of all aspects of factory operation and provides a general knowledge of all machinery and equipment.

Specialist training:

This is a detailed training for specific tasks. Not everyone will do everything. Different suppliers will cover training on their machines only. All trainings will be at client's factory.

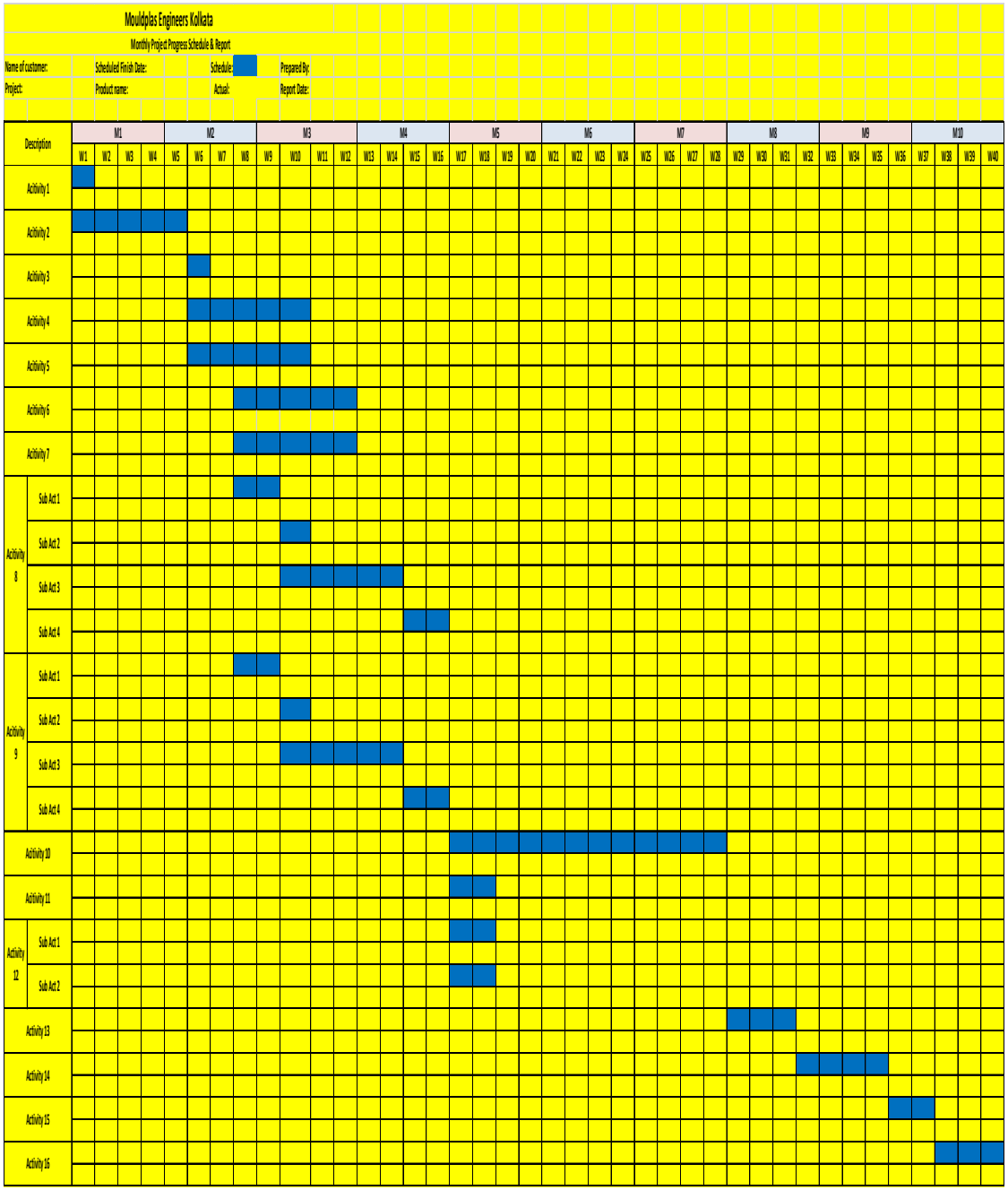
Training cost.

No cost. All free to client. This needs to be negotiated with suppliers in advance before placement of order on them.

Project Implementation schedule.

The total project implementation period is estimated at 06 months after the order is placed and down payment to supplier made.

The project implementation schedule is presented in Fig. 7.1 below.



Project Implementation Schedule Chart

Fig. 7 .1 : Project Implementation Schedule

Cost & revenue estimates.

Total initial investments

The initial fixed assets comprise the total fixed investment and the pre-production capital expenditures.

INITIAL INVESTMENT COST (Lacs INR)

Sr. No.	Cost Items	Local Cost	Foreign Cost	Total Cost	% Share
1	**Fixed investment**				
1.1	Land	16.06		16.06	2.17
1.2	Building and civil work	69.50		69.50	9.38
1.3	Machinery and equipment	188.50		188.50	25.45
1.4	Utilities	48.50		48.50	6.55
1.5	Misc Fixed Assets	11.50		11.50	1.55
	Sub -total	**334.06**	**0.00**	**334.06**	**45.11**
2	**Pre operating cost ***				

2.1	FINANCIAL & ADMIN COST	29.18	0.00	29.18	3.94
2.2	CONTINGENCY @2.5%	7.95	0	7.95	1.07
2.3	TECHNICAL KNOWHOW	5.00	0	5.00	0.68
	Subtotal	**42.13**	**0.00**	**42.13**	**5.69**
3	**Working capital for 3 months running ****	364.40		364.40	49.20
	Grand Total	**740.59**	**0.00**	**740.59**	**100.00**

** N.B Pre operating cost include project implementation cost such as installation, start-up, commissioning,*

project engineering, project management etc and capitalized interest during construction.

*** The total working capital required at full capacity operation is INR 364.40 Lacs for 3 months.*

During the production, the working capital requirement will be financed by funds to be generated internally. Working capital loan will be financed separately.

Total fixed investment.

The chart below gives the calculation of this.

COST OF THE PROJECT			
	Rs.in lakhs		
		APPROPRIATED AMT	GROSS BLOCK
LAND & SITE DEVELOPEMENT	16.06	19.54	35.61
BUILDINGS - PARK & THEMING	69.50	84.58	154.08
PLANT & MACHINERY	188.50	229.39	417.89
UTILITIES	48.50	59.02	107.52
MISC.FIXED ASSETS	11.50	13.99	25.49
PREL. & PRE-OP. EXPNS			
FINANCIAL & ADMIN COST	29.18		
TECHNICAL KNOWHOW	5.00		
WORKING CAPITAL 3 MONTHS	364.40		
CONTINGENCY @2.5%	7.95		
TOTAL	740.59	406.53	740.59
Say	741		

Pre-production capital expenditure as above.

Working capital requirements.

WORKING CAPITAL MONTHS		3	364.40

Depreciation & Amortization.

Depreciation Schedule (as per Income Tax Act)

Written Down Value Method

Rs. in Lacs

Particulars	Original Cost	Dep 2020-21	WDV	Dep 2021-22	WDV	Dep 2022-23	WDV	Dep 2023-24	WDV	Dep 2024-25	WDV
Land & site Development.	35.61	1.78	33.82	1.78	32.04	1.78	30.26	1.78	28.48	1.78	26.70
Building & Civil works	154.08	15.41	138.67	13.87	124.80	12.48	112.32	11.23	101.09	10.11	90.98
Plant & Machinery	417.89	125.37	292.52	87.76	204.77	61.43	243.34	73.00	170.34	51.10	119.24
Furniture & Fixtures	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
Office Equipment	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
	633.07	**145.11**	**487.96**	**105.70**	**382.27**	**77.76**	**404.51**	**87.87**	**316.64**	**64.66**	**251.97**

Particulars	WDV	Dep 2025-26	WDV	Dep 2026-27	WDV	Dep 2027-28	WDV	Dep 2028-29	WDV	Dep 2029-30	WDV
Land & site Development.	26.70	1.78	24.92	1.78	23.14	1.78	21.36	1.78	19.58	1.78	17.80
Building & Civil works	90.98	9.10	81.88	8.19	73.69	7.37	66.33	6.63	59.69	5.97	53.72
Plant & Machinery	119.24	135.77	93.46	28.04	65.43	19.63	45.80	163.74	-117.94	-35.38	-82.56
Furniture & Fixtures	7.53	0.75	6.77	0.68	6.10	0.61	5.49	0.55	4.94	0.49	4.44
Office Equipment	7.53	0.75	6.64	0.66	5.98	0.60	5.38	0.54	4.84	0.48	4.36
	251.97	**148.15**	**213.69**	**39.35**	**174.34**	**29.98**	**144.35**	**173.24**	**-28.88**	**-26.65**	**-2.23**

Compilation of operational input cost.

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Raw Material and Inputs	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
Utilities	65	65	65	65	65	65	65	65	65	65
Maintenance and repair	22	24	26	28	30	32	34	37	40	43
Labour direct	69	74	80	86	92	99	107	115	123	133
Administration Costs	39	42	45	48	52	56	60	65	69	75
Cost of marketing and distribution & Misc Exps	19	21	22	24	26	28	30	32	35	37
Total Operating Costs	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**
Depreciation	71	62	55	48	42	37	33	29	25	23
Cost of Finance	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
Total Production Cost	**1,644**	**1,782**	**1,777**	**1,773**	**1,771**	**1,775**	**1,786**	**1,800**	**1,815**	**1,833**
Item wise cost Break up/Pc										
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64

Raw material, operating & utilities supplies.

H	RAW MATERIAL						
	Per month	Kg	Qty Pcs	Rate in INR	Total in lacs		
1	HDPE Granules	84,546.05		96	81.16	Any make 20 MFI or more	
2	Handles 5 Ltr		90,000	10	9	Outsourced.	
3	Handles 10 Ltr		1,40,000	14	19.6	Outsourced.	
4	Masterbatch	4,227.30		140	5.92	Any make suitable to above Injection grade. 5% max consumption of HDPE volume.	
	Total :-				**115.68**		
Considering Wastage/Reject/Scrap @		5%	Of total Raw Material Cost				5.78
Total Cost of Raw Material Per Month.							**121.47**

UTILITIES CONSUMPTION & COST

Sr. No.	Description	Annual Consumption	UOM	Unit Cost (INR)	Cost ('000 INR)	Total Connected Load in KW	Running Load is 40%	Running hour/Annum 7200	So KWh Consumed/year
1	Electricity	8,16,480	kWh	8	65.32	283.5	113.4		8,16,480
2									
	Total Annual Cost				65.32				

Personnel requirements.

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SALARIES & ALLOWANCES

For all 3 Shifts — in Lacs

DESIGNATION	NO	REMUN/ANNUM	PERKS @30%	TOTAL
GENERAL MANAGER	1	5,00,000	1,50,000	7
IMM DEPT				
PRODUCTION MANAGER	0	0	0	0
SHIFT ENGINEER	1	3,00,000	90,000	4
SHIFT OPERATORS	3	2,00,000	60,000	8
PRODUCTION HELPERS	3	1,00,000	30,000	4
LOADING	3	80,000	24,000	3
Assembly Department				
Assembly Helpers	4	1,00,000	30,000	5
Stacking & Despatch Department				
Stacking & Despatch helpers	4	1,00,000	30,000	5
STORES				
STORES MANAGER	0	0	0	0
STORE KEEPERS	1	1,80,000	54,000	2
DESPATCH STAFF	1	1,30,000	39,000	2
QUALITY CONTROL & TESTING				
INCHARGE	1	4,50,000	1,35,000	6
INSPECTORS	2	3,00,000	90,000	8
GENERAL MC MAINTENANCE	1	1,80,000	54,000	2
GENERAL MOULD MAINTENANCE	1	1,80,000	54,000	2
OFFICE EXECUTIVES				
PURCHASE & COMMERCIAL	0	2,50,000	75,000	0
ACCOUNTS	1	2,50,000	75,000	3
ADMINISTRATION	1	2,50,000	75,000	3
OFFICE STAFF	1	1,80,000	54,000	2
SALES & MARKETING	1	1,80,000	54,000	2
SECURITY STAFF	3	1,00,000	30,000	4
TOTAL	33			69

Non-labor maintenance and spares, Administrative overheads, and distribution as above.

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Sales prices & Annual revenue projection.

MOULDED BUCKETS Size Ltr.	INR Cost of Production / Pc	INR Selling Price / Pc	INR Profit / Pc
	0.00	0.00	0.00
5	46.06	60.00	13.94
10	76.48	90.00	13.52

NET PROFIT	203	245	237	237	228	354	314	299	321	256
in % of sales revenue	10	11	11	11	11	16	15	14	15	12
CUMMULATIVE CASH	203	449	685	922	1151	1504	1819	2118	2439	2695
INCOME FROM [in Lacs INR]	year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10

Average DSCR	2.36		
Break Even Percentage	70%	2021-22	
ROI	2.50	Years	
Internal Rate of Return	99%		
CASH SURPLUS	203.37	2021-22	If production starts in 2020-21

Financial Analysis.

Debt Service Coverage Ratio (DSCR)

Debt Service Coverage Ratio (DSCR)								
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
					(Rs. in Lakhs)			
	Source							
1	Profit after Tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83
2	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54
3	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
4	**TOTAL (1+2+3)**	**360.70**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**
	Deployment							
5	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
6	Loan Repayment	111.09	111.09	111.09	111.09	111.09	0.00	0.00
7	**TOTAL(5+6)**	**157.33**	**147.33**	**137.33**	**127.34**	**117.34**	**0.00**	**0.00**
8	**DSCR(4/7)**	**3.25**	**3.53**	**3.37**	**3.28**	**3.11**		
	Average DSCR	**2.36**						

*** What does a high debt service coverage ratio indicate?
Typically, a DSCR greater than 1 means the entity—whether an individual, company, or government —has sufficient income to pay its current debt obligations

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Breakeven Point.

Breakeven Point Calculation 1										
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1720.08	1722.16	1725.13	1729.08	1737.83	1753.95	1771.27	1789.90	1809.92
Break Even Percentage	**81%**	**80%**	**80%**	**80%**	**80%**	**80%**	**81%**	**82%**	**83%**	**84%**

Breakeven Point Calculation 2										
	When Cash Surplus of last year is reinvested into business every year									
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1516.72	1476.88	1488.40	1492.05	1509.56	1400.28	1456.89	1490.86	1489.04
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	**255.89**
Break Even Percentage	**81%**	**70%**	**68%**	**69%**	**69%**	**70%**	**65%**	**67%**	**69%**	**69%**

The **break-even point** will **increase when** the amount of fixed costs and expenses **increases**.

In other words, if a greater proportion of lower contribution margin products are sold, the break-even point will increase. (Contribution margin is selling price

Here we are talking about buckets which are low margin high volume sales products.

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Calculation of Income Tax Payable.

Calculation of Income Tax Payable										
Description	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
Profit as per P&L A/c.	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
Adjusted profit		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: Depreciation as Per P&L Account	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
	370.90	439.92	437.84	434.87	430.92	422.17	406.05	388.73	370.10	350.08
Less: Depreciation as Per IT	145.11	105.70	77.76	87.87	64.66	148.15	39.35	29.98	173.24	-26.65
Profit before tax	225.80	334.22	360.09	346.99	366.25	274.02	366.70	358.74	196.86	376.73
Profit as per act	225.80	334.22	360.09	346.99	366.25	274.02	366.70	358.74	196.86	376.73
Income tax	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
Tax payable	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
Total tax Payable	**56.45**	**83.55**	**90.02**	**86.75**	**91.56**	**68.50**	**91.68**	**89.69**	**49.22**	**94.18**

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INTERNAL RATE OF RETURN (IRR).

INTERNAL RATE OF RETURN (IRR)											
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						(Rs. in Lakhs)					
1	**Total Project Cost**	**740.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2	Profit after tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	3459.47
3	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
4	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
	Net Cash Flow (2+3+4) - 1	**-379.90**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**	**299.04**	**320.88**	**233.26**
	Internal Rate of Return	**99%**									

***	The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero.
	In other words, it is the expected compound annual rate of return that will be earned on a project or investment.
	In the calculation above , an initial investment has a 99% IRR. That is equal to earning a 99% compound annual growth rate.

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INTEREST CALCULATION.

INTEREST CALCULATION												
PROJECT COST	740.59											
EQUITY	185.15											
DEBT	555.44											
INTEREST RATE	9.00%											
REPAYMENT PERIOD IN YRS	5											
INTEREST CALC QRTRLY		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	YEAR6	YEAR7	YEAR 8	YEAR 9	YEAR 10	YEARXI
	QRTR1											
OPENING BALANCE		555	444	333	222	111	0	0	0	0	0	0
INTEREST		12	10	7	5	2	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28		0		0		0
CLOSING BALANCE		528	417	305	194	83	0	0	0	0	0	0
	QRTR2											
OPENING BALANCE		528	417	305	194	83	0	0	0	0	0	0
INTEREST		12	9	7	4	2	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		500	389	278	167	56	0	0	0	0	0	0
	QRTR3											
OPENING BALANCE		500	389	278	167	56	0	0	0	0	0	0
INTEREST		11	9	6	4	1	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		472	361	250	139	28	0	0	0	0	0	0
	QRTR4											
OPENING BALANCE		472	361	250	139	28	0	0	0	0	0	0
INTEREST		11	8	6	3	1	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		444	333	222	111	0	0	0	0	0	0	0
YEARLY REPAYMENT												
PRINCIPAL		111	111	111	111	111	0	0	0	0	0	0
INTEREST		46	36	26	16	6	0	0	0	0	0	0
TOTAL		157	147	137	127	117	0	0	0	0	0	0

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Calculation of Depreciation.

Calculation of Depreciation													
Description of Asset	Value	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total Dep	WDV
Land & Site Developt.	35.61	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	17.80	17.80
Buildings	154.08	7.70	7.32	6.95	6.61	6.27	5.98	5.68	5.39	5.13	4.87	61.90	92.18
Plant & Machinery	417.89	58.50	50.31	43.27	37.21	32.00	27.52	23.67	20.36	17.51	15.05	325.41	92.48
Additions					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
								0.00	0.00	0.00	0.00	0.00	0.00
											0.00	0.00	0.00
Sub total													
Furniture & Fixtures	12.75	2.10	1.77	1.48	1.25	1.05	0.88	0.74	0.62	0.52	0.44	10.85	1.90
Office Equipment	12.75	1.27	1.15	1.03	0.93	0.84	0.75	0.68	0.61	0.55	0.49	8.30	4.44
Total	633.07	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64	424.26	208.81
Value of assets	633.07	561.70	499.38	444.86	397.08	355.14	318.23	285.68	256.92	231.44	208.81		

Rates of Depreciation(%)	
Buildings & Civil works	5
Plant & Machinery	14
Furniture & Fixtures	16
office Equipment	10

Land & Site Development is written off over the period of 20 YEARS

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Ten years P&L statement.

VIABILITY STATEMENT										
					(Rupees in lakhs)					
INCOME FROM	year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5 Ltr.	583	648	648	648	648	648	648	648	648	648
10 Ltr.	1,361	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512
TOTAL INCOME	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
EXPENSES										
RAW MATERIALS										
Total	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
SALARIES	69	74	80	86	92	99	107	115	123	133
POWER	65	65	65	65	65	65	65	65	65	65
REPAIR & MAINT	22	24	26	28	30	32	34	37	40	43
ADMIN EXP	39	42	45	48	52	56	60	65	69	75
MISCELLANEOUS	19	21	22	24	26	28	30	32	35	37
TOTAL	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
GROSS PROFIT	417	476	464	451	437	422	406	389	370	350

VIABILITY STATEMENT CONTD.										
	Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
	1	2	3	4	5	6	7	8	9	10
INTEREST ON LOAN	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
DEPRECIATION	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
PBT	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
TAX	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
PAT	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	233.26
CASH AVAILABLE	314.45	356.36	347.82	348.12	339.35	353.67	314.38	299.04	320.88	255.89
LOAN REPAYMENT	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	255.89
CUMMULATIVE CASH	203.37	448.64	685.37	922.40	1150.67	1504.33	1818.71	2117.75	2438.64	2694.53

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Depreciation Schedule (as per Income Tax Act)

Depreciation Schedule (as per Income Tax Act)											
Written Down Value Method											
								Rs. in Lacs			
	Original	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV
Particulars	Cost	2020-21		2021-22		2022-23		2023-24		2024-25	
Land & site Development.	35.61	1.78	33.82	1.78	32.04	1.78	30.26	1.78	28.48	1.78	26.70
Building & Civil works	154.08	15.41	138.67	13.87	124.80	12.48	112.32	11.23	101.09	10.11	90.98
Plant & Machinery	417.89	125.37	292.52	87.76	204.77	61.43	243.34	73.00	170.34	51.10	119.24
Furniture & Fixtures	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
Office Equipment	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
	633.07	**145.11**	**487.96**	**105.70**	**382.27**	**77.76**	**404.51**	**87.87**	**316.64**	**64.66**	**251.97**
	WDV	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV	Dep	WDV
Particulars		2025-26		2026-27		2027-28		2028-29		2029-30	
Land & site Development.	26.70	1.78	24.92	1.78	23.14	1.78	21.36	1.78	19.58	1.78	17.80
Building & Civil works	90.98	9.10	81.88	8.19	73.69	7.37	66.33	6.63	59.69	5.97	53.72
Plant & Machinery	119.24	135.77	93.46	28.04	65.43	19.63	45.80	163.74	-117.94	-35.38	-82.56
Furniture & Fixtures	7.53	0.75	6.77	0.68	6.10	0.61	5.49	0.55	4.94	0.49	4.44
Office Equipment	7.53	0.75	6.64	0.66	5.98	0.60	5.38	0.54	4.84	0.48	4.36
	251.97	**148.15**	**213.69**	**39.35**	**174.34**	**29.98**	**144.35**	**173.24**	**-28.88**	**-26.65**	**-2.23**

Additionally, in tabular format following is provided together for better financial understanding of the project.

Total Initial Investment cost.

Project Name :-	MOULDED BUCKETS Manufacturing
Capacity per month	2,30,000
3.1 Base Proposal	(Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)

COST OF THE PROJECT			
	Rs.in lakhs		
		APPROPRIATED	GROSS BLOCK
LAND & SITE DEVELOPEMENT	16.06	19.54	35.61
BUILDINGS - PARK & THEMING	69.50	84.58	154.08
PLANT & MACHINERY	188.50	229.39	417.89
UTILITIES	48.50	59.02	107.52
MISC.FIXED ASSETS	11.50	13.99	25.49
PREL. & PRE OP. EXPNS			
FINANCIAL & ADMIN COST	29.18		
TECHNICAL KNOWHOW	5.00		
WORKING CAPITAL 3 MONTHS	364.40		
CONTINGENCY @2.5%	7.95		
TOTAL	740.59	406.53	740.59
Say	741		

Investment during production. **Same as above.**

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Internal Rate of Return IRR of the project

INTERNAL RATE OF RETURN (IRR)											
		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						(Rs. in Lakhs)					
1	**Total Project Cost**	**740.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2	Profit after tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	3459.47
3	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
4	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
	Net Cash Flow (2+3+4) - 1	**-379.90**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**	**299.04**	**320.88**	**233.26**
	Internal Rate of Return	**99%**									

***	The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero.
	In other words, it is the expected compound annual rate of return that will be earned on a project or investment.
	In the calculation above , an initial investment has a 99% IRR. That is equal to earning a 99% compound annual growth rate.

Total production cost.

PRODUCTION COST (in Lacs INR)										
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Raw Material and Inputs	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
Utilities	65	65	65	65	65	65	65	65	65	65
Maintenance and repair	22	24	26	28	30	32	34	37	40	43
Labour direct	69	74	80	86	92	99	107	115	123	133
Administration Costs	39	42	45	48	52	56	60	65	69	75
Cost of marketing and distribution & Misc Exps	19	21	22	24	26	28	30	32	35	37
Total Operating Costs	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**
Depreciation	71	62	55	48	42	37	33	29	25	23
Cost of Finance	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
Total Production Cost	**1,644**	**1,782**	**1,777**	**1,773**	**1,771**	**1,775**	**1,786**	**1,800**	**1,815**	**1,833**
Item wise cost Break up/Pc										
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64

Production cost for each product.

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Items	**Gms/Pc**	**Total Production /Yr**										Weight %
		90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
5 Ltr.	170.20	972000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	0.28
10 Ltr.	439.59	1512000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	0.72
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**		
5 Ltr.	459	497	496	495	494	495	499	502	507	511		
10 Ltr.	1185	1285	1281	1278	1277	1279	1288	1298	1309	1321		
Total :-	1644	1782	1777	1773	1771	1775	1786	1800	1815	1833		
INR/Pc	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**		
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36		
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64		

Working capital required.

H	RAW MATERIAL						
	Per month	Kg	Qty Pcs	Rate in INR	Total in lacs		
1	HDPE Granules	84,546.05		96	81.16	Any make 20 MFI or more	
2	Handles 5 Ltr		90,000	10	9	Outsourced.	
3	Handles 10 Ltr		1,40,000	14	19.6	Outsourced.	
4	Masterbatch	4,227.30		140	5.92	Any make suitable to above Injection grade. 5% max consumption of HDPE volume.	
	Total :-				**115.68**		
Considering Wastage/Reject/Scrap @		5%	Of total Raw Material Cost				5.78
Total Cost of Raw Material Per Month.							**121.47**

Working Capital for 3 months = 121.47 x 3 = 364.41 lacs INR.

Sources of finance.

MEANS OF FINANCE			
PROMOTER'S CONTRIBUTION		185.15	
TERM LOAN		555.44	
Grand Total		740.59	

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Cashflow table.

CASH FLOW FOR FINANCIAL MANAGEMENT (in Lacs INR)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Scrap sales
TOTAL CASH INFLOW	**741**	**1,944**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**100**
Inflow funds	741	0	0	0	0	0	0	0	0	0	0	0
Inflow operation	0	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	0
Other income	0	0	0	0	0	0	0	0	0	0	0	100
TOTAL CASH OUTFLOW	**941**	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**	**0**
Increase in fixed assets	551	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	364.40	0	0	0	0	0	0	0	0	0	0	0
Operating costs	25.49	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810	0
Marketing and Distribution cost	0	0	0	0	0	0	0	0	0	0	0	0
Income tax	0	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18	0
Financial costs	0	46	36	26	16	6	0	0	0	0	0	0
Loan repayment	0	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00	0
SURPLUS (DEFICIT)	**-741**	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**	**100**
CUMULATIVE CASH BALANCE	**0**	**203**	**449**	**685**	**922**	**1,151**	**1,504**	**1,819**	**2,118**	**2,439**	**2,695**	**2,795**

Net income statement.

INCOME STATEMENT (in LACS INR)										
Item	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Sales revenue	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
Less variable costs	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
VARIABLE MARGIN	**417**	**476**	**464**	**451**	**437**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	21	22	21	21	20	20	19	18	17	16
Less fixed costs	111	111	111	111	111	0	0	0	0	0
OPERATIONAL MARGIN	**306**	**365**	**353**	**340**	**326**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	16	17	16	16	15	20	19	18	17	16
Financial costs	46	36	26	16	6	0	0	0	0	0
GROSS PROFIT	**260**	**329**	**327**	**324**	**320**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	13	15	15	8	8	14	14	15	15	16
Income (corporate) tax	56	84	90	87	92	69	92	90	49	94
NET PROFIT	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**
in % of sales revenue	10	11	11	11	11	16	15	14	15	12
CUMMULATIVE CASH	**203**	**449**	**685**	**922**	**1151**	**1504**	**1819**	**2118**	**2439**	**2695**

All the calculations as mentioned above will be attached here as annexure in pdf format for your kind perusal.

6 September 2020

Mouldplas Engineers Kolkata

Monthly Project Progress Schedule & Report

Name of customer: **Scheduled Finish Date:** **Schedule:** **Prepared By:**

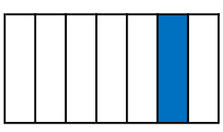
Project: **Product name:** **Actual:** **Report Date:**

Description		M1				M2				M3				M4				M
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18
Acitivity 1																			
Acitivity 2																			
Acitivity 3																			
Acitivity 4																			
Acitivity 5																			
Acitivity 6																			
Acitivity 7																			
Acitivity 8	Sub Act 1																		
	Sub Act 2																		
	Sub Act 3																		
	Sub Act 4																		
Acitivity 9	Sub Act 1																		
	Sub Act 2																		
	Sub Act 3																		
	Sub Act 4																		
Acitivity 10																			
Acitivity 11																			
Activity 12	Sub Act 1																		
	Sub Act 2																		
Activity 13																			

Activity 13																		
Activity 14																		
Activity 15																		
Activity 16																		

I5		M6				M7				M8				M9				M10		
W19	W20	W21	W22	W23	W24	W25	W26	W27	W28	W29	W30	W31	W32	W33	W34	W35	W36	W37	W38	W39

W40



Project Name :-	MOULDED BUCKETS Manufacturing
Capacity per month	2,30,000
3.1 Base Proposal	(Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)

COST OF THE PROJECT

		Rs.in lakhs		
			APPROPRIATED A	GROSS BLOCK
A	LAND & SITE DEVELOPEMENT	16.06	19.54	35.61
B	BUILDINGS - PARK & THEMING	69.50	84.58	154.08
C	PLANT & MACHINERY	188.50	229.39	417.89
D	UTILITIES	48.50	59.02	107.52
E	MISC.FIXED ASSETS	11.50	13.99	25.49
F	PREL. & PRE OP. EXPNS			
	FINANCIAL & ADMIN COST	29.18		
G	TECHNICAL KNOWHOW	5.00		
H	WORKING CAPITAL 3 MONTHS	364.40		
I	CONTINGENCY @2.5%	7.95		
	TOTAL	740.59	406.53	740.59
	Say	741		

MEANS OF FINANCE

PROMOTER'S CONTRIBUTION		185.15	
TERM LOAN		555.44	
Grand Total		740.59	

Average DSCR	2.36		
Break Even Percentage	70%	2021-22	
ROI	2.50	Years	
Internal Rate of Return	99%		
CASH SURPLUS	203.37	2021-22	If production starts in 2020-21

	INR
MOULDED BUCKETS Size Ltr.	Cost of Production / Pc
	0.00
5	46.06
10	76.48

NET PROFIT	203	245	237	237	228	354
in % of sales revenue	10	11	11	11	11	16
CUMMULATIVE CASH	203	449	685	922	1151	1504
INCOME FROM [in Lacs INR]	year 1	Year 2	Year 3	Year 4	Year 5	Year 6

* N.B Pre operating cost include project implementation cost such as installation, startup, commissioning, project engineering, project management etc and capitalized interest during construction.

** The total INITIAL working capital required at full capacity operation is INR 364.40 Lacs for 3 months. During the production the working capital requirement will be financed by funds to be generated internally.

A

LAND & DEVELOPMENT all Amount in INR Lacs

WB Standard						
	Acre	Bigha	Sq Mtr	Sq Ft	RATE / Bigha	AMOUNT
LAND COST	0.25	1.25	1673	18000	3.00	3.75
- Compound wall & fencing						

Land

40 Mtr

41.82 Mtr

Shed

1		Acre=
1		Katha=
20		Katha=
1		Bigha=
1		Sq Mtr=
1		Bigha=

-compound wall @	**Running Metre Rs.**	**Height Mtr**	**Total Length of Wall mtrs**				20	Mtr	1		Acre=
	0.05	3	167.29			8.36	30	Mtr	1		Acre=
levelling & filling				ACRES	0.94	1.17			3		Acre=
-Paving				ACRES	0.14	0.02	.@10% land paved		3		Acre=
- External Drainage, water drains,	0.01		250.93	RM		2.51			3		Acre=
Land scaping				ACRE	3	0.2475					
	Total					**16.06**					

B	**BUILDINGS**						
	PARTICULARS		DIMENSION		AREA IN	RATE PER	TOTAL
			LENGTH	WIDTH	SQ.Mtr	SQ.Mtr	AMOUNT
			IN R.MTR.	IN R.MTR.		(Rs.)	s.in lacs)
1	MAIN ENTRANCE GATE					L.S	5
	AND SECURITY BUILDING & ENCLOSURES.						
2	ADMINISTRATION,ACCOUNTS,				40	10000	4
3	COVERED AREA FOR COMPLETE PLANT				560	10,000	56
							0
							0
							0
4	WAREHOUSE				50	1,000	0.5
5	RAW MATERIAL				100	1,000	1
6	FINISHED GOODS				200	1,000	2
7	SUBSTATION				100	1,000	1
	GRAND TOTAL						**69.5**

D	**UTILITIES**				QUANTITY	RATE	AMOUNT
1	Raw Water Pump			NOS	1	50,000	1
2	Filter Pump			Nos	1	50,000	1
3	Filter				1	3,00,000	3
5	piping			LS	1	2,00,000	2
6	Sprinklers & Drips			LS	1	1,00,000	1

	SUBL TOTAL						**7**
	Sewerage Network						
1	STP Civil works			LS	1	2	2
2	Manholes			NOS	5	0.50	3
3	Piping			LS	1	1	1
4	Machinery			LS	1	1	1
	SUB TOTAL						**7**
	Power Distribution						
	Description						
1	DP Structure			NO	1	1	1
2	Indoor Transformer			NO	1	4	4
3	HT Panel Board			NO	1	2	2
4	DG Set			NO	1	10	10
5	HT Cable			LS	1	1	1
6	LT Bus Duct			LS	1	1	1
7	LT Switch Boards						
	Main LT Board			NO	1	3	3
	CESC/WBSEB Board			NO	1	2	2
	Mccs			NO	5	1.00	5
8	Capacitors			LS	1	1	1
9	LT Cables			LS	1	2	2
10	Lighting			LS	1	0.5	0.5
11	Earthing			LS	1	0.5	0.5
12	Erection & Commissioning			LS	1	1	1
13	CEIG Inspection			LS	1	1	1
	SUB TOTAL						35
	SUB TOTAL						**49**

C	**MACHINERY**						
		INR Lacs					
1		**188.5**					

E	**MISC ASSETS**						
1	Computer Network			LS			1
2	Office furniture and Equipments			LS			1
3	Vehicles			NOS	1	7.5	7.5
4	Fire Fighting SYSTM			LS			1
5	Communication equipments			LS			1
		TOTAL					**11.5**

F						
ANNEXURE D						
DETAILS OF PRE-OPERATIVE EXPENSES						
S.NO	PARTICULARS				AMOUNT	
					(Rs.in lacs)	
A:	Preliminary & Capital Issue Expenses					
1	Company Formation				0.5	
		Sub Total			0.5	
B:	Pre-operative Expenses					
1	Project Report Expenses				2	
2	Deposits to Various Govt. Deptt.				1	
3	Establishment				3	
4	Travelling				2	
5	Stationery, Printing etc.				0.4	
6	Legal Expenses				1	
7	Insurance				1	
8	Up-front fees				0.5	

9	Interest during implementation				12	
10	Other Miscellaneous Expenses				6	
		Sub Total			29	
		GRAND TOTAL			**29**	

H	**RAW MATERIAL**					
	Per month	Kg	Qty Pcs	Rate in INR	Total in lacs	
1	HDPE Granules	84,546.05		96	81.16	Any make 20 MFI or more
2	Handles 5 Ltr		90,000	10	9	Outsourced.
3	Handles 10 Ltr		1,40,000	14	19.6	Outsourced.
4	Masterbatch	4,227.30		140	5.92	Any make suitable to above Injection grade. 5% max consumption of HDPE volume.
5						
6						
7						
8						
9						
10						
12						
13						
14						
16						
17						
18						
19						

MOULDED BUCKETS assembly weight approx				
Ltr			Part	Approx weight in gms
5	Bucket			170.2
10	Bucket			439.6

Volume	**Unit**	**Material**	**Height cm**	**Diameter cm [D1]**
5	Litres	HDPE	17.9	21.4
10	Litres	HDPE	26.6	27.9

20							
21							
22							
	Total :-				**115.68**		
Considering Wastage/Reject/Scrap @			5%	Of total Raw Material Cost			5.78
Total Cost of Raw Material Per Month.							**121.47**

INR	INR
Selling Price / Pc	**Profit / Pc**
0.00	0.00
60.00	13.94
90.00	13.52

314	**299**	**321**	**256**
15	**14**	**15**	**12**
1819	**2118**	**2439**	**2695**
Year 7	**Year 8**	**Year 9**	**Year 10**

5	Bigha	WB
720	Sq Ft	
1	Bigha	
14400	Sq Ft	
10.76	Sq Ft	
1338.29	Sq Mtr	

6691.45	Sq Mtr
72000	Sq Ft
216000	Sq Ft
20074.34944	Sq Mtr
15	Bigha

per piece	

Diameter cm [D2]	Diam square [D1 Square]	Diam square [D2 Square]	Wall Thickness cm	Density gms/cc	Volume in cc	Weight Gms/Pc
21.1	457.96	445.21	0.15	0.95	179.16	170.2
27.5	778.41	756.25	0.2	0.95	462.72	439.6

		Hrs	Days	Per Month	
2.2	3.1 Base Proposal (Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)	22	25		550 Hrs

No.	Description	Q'ty	Unit Price	Total Amount	Remark	Power KW
A	**Injection Moulding Machine-**					
1	Injection Molding Machine- 5 Ltr Bucket (350tons)	3 Set	46,00,000.00	1,38,00,000.00	3-shfit	186 350 Tons
2					3-shift	
3					3-shift	
	Total-Sum	**3**		**1,38,00,000.00**		
B	**Molds**					
1	HDPE Bucket Single cavity mould for 5 Ltr.	1 Set	3,50,000.00	3,50,000.00	3-shift	
2	HDPE Bucket Single cavity mould for 10 Ltr.	2 Set	4,00,000.00	8,00,000.00	3-shift	
3						
4						
5						
6						
7						
8						
9						
	Total-Sum	**3**		**11,50,000.00**		
C						
1		0 Set		0.00		
2		0 Set		0.00		
3		0 Set		0.00		
		0		**0.00**		
D						
1		0 Set		0.00		
2		0 Set		0.00		
3		0 Set		0.00		
		0		**0.00**		
E						
1		0 Set		0.00		
2		0 Set		0.00		
3		0 Set		0.00		
		0		**0.00**		

F							
1		0	Set		0.00		
		0			**0.00**		
G							
1		0	Set		0.00		
2		0	Set		0.00		
		0			**0.00**		
H	**Utility Equipment for Injection Molding Machine**						
1	Grinder 25 inch x 25 inch mouth opening	1	Set	4,50,000.00	4,50,000.00		30
2	Tumbler Mixer 100 Kgs per Batch	1	Set	2,00,000.00	2,00,000.00		10
3	Diesel Generator Set 400 KVA	1	Set	18,50,000.00	18,50,000.00		((kw/thyristor load)*80%)80%
4	Cooling Water Supply+cooling Tower + Chilling Plant	1	LS	10,00,000.00	10,00,000.00		40
5	Compressed Air System	1	Set	50,000.00	50,000.00		7.5
6	Testing Equipments + lighting	1	Set	1,50,000.00	1,50,000.00		10
7	Manual Forklifts 5 Tons capacity & 3 Miter elevation	2	Set	1,00,000.00	2,00,000.00		
8							
9							
10							
11							
12							
13							
	Total-Sum	**8**			**39,00,000.00**		
	Grand Total				**1,88,50,000.00**		**283.5** KW

INITIAL INVESTMENT COST (Lacs INR)

Sr. No.	Cost Items	Local Cost	Foreign Cost	Total Cost	% Share
1	**Fixed investment**				
1.1	Land	16.06		16.06	2.17
1.2	Building and civil work	69.50		69.50	9.38
1.3	Machinery and equipment	188.50		188.50	25.45
1.4	Utilities	48.50		48.50	6.55
1.5	Misc Fixed Assets	11.50		11.50	1.55
	Sub -total	**334.06**	**0.00**	**334.06**	**45.11**
2	**Pre operating cost ***				
2.1	FINANCIAL & ADMIN COST	29.18	0.00	29.18	3.94
2.2	CONTINGENCY @2.5%	7.95	0	7.95	1.07
2.3	TECHNICAL KNOWHOW	5.00	0	5.00	0.68
	Sub -total	**42.13**	**0.00**	**42.13**	**5.69**

I. FINANCIAL ANALYSIS

The financial analysis of the medical syringe project is based on the data ı

Construction period	1 year
Source of finance	30 % equity & 70% loan
Tax holidays	5 years
Bank interest	10%
Discount cash flow	10%
Accounts receivable	30 days
Raw material local	30 days
Raw material imported	120 days
Work in progress	1 day
Finished products	30 days
Cash in hand	5 days
Accounts payable	30 days
Repair and maintenance	5% of machinery cost

3	**Working capital for 3 months running ****	364.40		364.40	49.20
	Grand Total	**740.59**	**0.00**	**740.59**	**100.00**

** N.B Pre operating cost include project implementation cost such as installation, startup, commissioning,*

project engineering, project management etc and capitalized interest during construction.

*** The total working capital required at full capacity operation is INR 587 Lacs for 3 months.*

During the production the working capital requirement will be financed by funds to be generated internally. Working capital loan will be financed separately.

presented in the previous chapters and the following assumptions:-

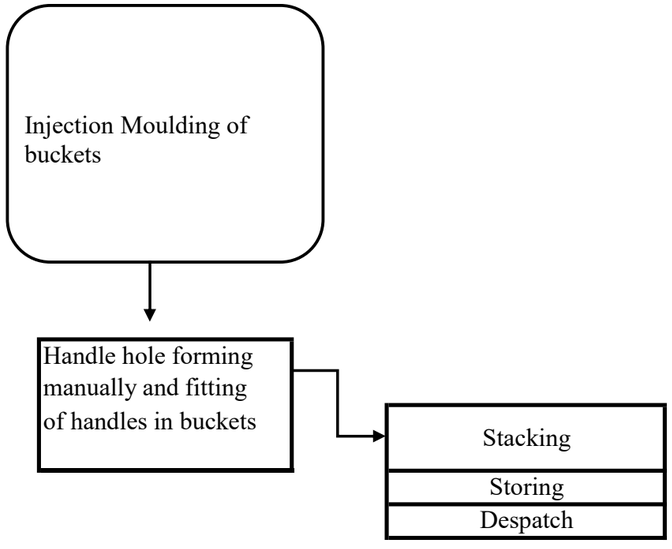
3. Productivity of Injection Molding Machine

Injection Machine for 3 Job-shift

Working Hour: ***22 Hours***
Working days ***25 Days***

Type of MOULDED BUCKETS	Machine Capacity	No. of cavity (Mold base)	Cycle time (second)	No. of Production per Day(pcs)	No. of Production per Month(pcs)	Machine Efficency	Production Target(pcs)	No Of Machines Required.			
3.1 Base Proposal (Production per month = 5 Ltr-90,000 pcs, 10 Ltr -1,40,000 pcs)											
For 5 Litres MOULDED BUCKETS											
5 Litres MOULDED BUCKETS	350 ton	1	18	4,400	1,10,000	**82%**	90,000	**1**	10,80,000.00	0.9	9,72,000.00
									-		
									-		
For 10 Litres MOULDED BUCKETS									-		
10 Litres MOULDED BUCKETS	350 ton	1	24	3,300	1,65,000	**85%**	1,40,000	**2**	16,80,000.00	0.9	15,12,000.00
									-		
									-		
Total (Minimum Prod.) Pieces / Month					**2,75,000**		**2,30,000**	**3**	27,60,000.00	0.9	24,84,000.00

Production Process for moulded bucket



Typical Investment Process of Syringe Production

1st-Step Investment

Process :
- **Bucket Manufacturing**
- **Metal Handles Assembly**
- **Stacking**
- **Storing**

- Injection Molds & Molding Machine
  (Injection Molds for Buckets

We are now proposing 1st Step Investment

2nd-Step Investment

Process :

- **Moulded Bucket handles**
- **Multicolur buckets**

- Injection Molds for moulded handles
- Injection Molding Machine for multicolour

3rd-Step Investment

Process :

- **Manufacture all types of buckets**

Multiple injection moulding set up
Produce in mass scale.

Type of Syringe	Selling price/ Piece	
	INR	
	0.00	
For 5 Ltr Buckets.	60.00	
For 10 Ltr Buckets.	90.00	

Production Forecast	*Capacity Pcs/Hr*
	0
5 Ltr.	164
10 Ltr.	255
Working hours/month	550

Output Pieces /annum						
Yield		*100%*	*95%*	*90%*	*85%*	*80%*
	0	-	-	-	-	-
5 Ltr.		10,80,000	10,26,000	9,72,000	9,18,000	8,64,000
10 Ltr.		16,80,000	15,96,000	15,12,000	14,28,000	13,44,000

		Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*	*Year 6*	*Year 7*	*Year 8*	*Year 9*	*Year 10*
Expected yield		*90%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
	0	-	-	-	-	-	-	-	-	-	-
5 Ltr.		9,72,000	10,80,000	10,80,000	10,80,000	10,80,000	10,80,000	10,80,000	10,80,000	10,80,000	10,80,000
10 Ltr.		15,12,000	16,80,000	16,80,000	16,80,000	16,80,000	16,80,000	16,80,000	16,80,000	16,80,000	16,80,000

8. RAW MATERIAL PER MONTH :

Moulded Buckets		**Output in Pcs/Month**	**2,30,000**
Total Raw material Cost Per Month		115.68	
Considering Wastage/Reject/Scrap @	5% Of total Raw Material Cost	5.78	
Total Cost of Raw Material Per Month.		**121.47**	

121.47

PRODUCTION COST (in Lacs INR)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Raw Material and Inputs	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
Utilities	65	65	65	65	65	65	65	65	65	65
Maintenance and repair	22	24	26	28	30	32	34	37	40	43
Labour direct	69	74	80	86	92	99	107	115	123	133
Administration Costs	39	42	45	48	52	56	60	65	69	75
Cost of marketing and distribution & Misc Exps	19	21	22	24	26	28	30	32	35	37
Total Operating Costs	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**
Depreciation	71	62	55	48	42	37	33	29	25	23
Cost of Finance	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
Total Production Cost	**1,644**	**1,782**	**1,777**	**1,773**	**1,771**	**1,775**	**1,786**	**1,800**	**1,815**	**1,833**
Item wise cost Break up/Pc										
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Items	**Gms/Pc**	**Total Production/ Yr**										Weight %
		90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
5 Ltr.	170.20	972000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	1080000	0.28
10 Ltr.	439.59	1512000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	1680000	0.72

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
5 Ltr.	459	497	496	495	494	495	499	502	507	511	
10 Ltr.	1185	1285	1281	1278	1277	1279	1288	1298	1309	1321	
Total :-	1644	1782	1777	1773	1771	1775	1786	1800	1815	1833	

INR/Pc	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
5 Ltr.	47.22	46.06	45.92	45.82	45.77	45.87	46.17	46.52	46.92	47.36	
10 Ltr.	78.40	76.48	76.24	76.08	75.99	76.15	76.66	77.24	77.90	78.64	

UTILITIES CONSUMPTION & COST

Sr. No.	Description	Annual Consumption	UOM	Unit Cost (INR)	Cost (`000 INR)	Total Connected Load in KW	Running Load is	Running hour/Annum	So KWh Consumed/year
							40%	7200	
1	Electricity	8,16,480	kWh	8	65.32	283.5	113.4		8,16,480
2									
Total Annual Cost					**65.32**				

0

VIABILITY STATEMENT

INCOME FROM	(Rupees in lakhs)									
	year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5 Ltr.	583	648	648	648	648	648	648	648	648	648
10 Ltr.	1,361	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512	1,512
TOTAL INCOME	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
EXPENSES										
RAW MATERIALS										
Total	1,312	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458
SALARIES	69	74	80	86	92	99	107	115	123	133
POWER	65	65	65	65	65	65	65	65	65	65
REPAIR & MAINT	22	24	26	28	30	32	34	37	40	43
ADMIN EXP	39	42	45	48	52	56	60	65	69	75
MISCELLANEOUS	19	21	22	24	26	28	30	32	35	37
TOTAL	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
GROSS PROFIT	417	476	464	451	437	422	406	389	370	350

VIABILITY STATEMENT CONTD.

	Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
	1	2	3	4	5	6	7	8	9	10
INTEREST ON LOAN	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
DEPRECIATION	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
PBT	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
TAX	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
PAT	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	233.26
CASH AVAILABLE	314.45	356.36	347.82	348.12	339.35	353.67	314.38	299.04	320.88	255.89
LOAN REPAYMENT	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	255.89
CUMMULATIVE CASH	203.37	448.64	685.37	922.40	1150.67	1504.33	1818.71	2117.75	2438.64	2694.53

INCOME STATEMENT (in LACS INR)

Item	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Sales revenue	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
Less variable costs	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810
VARIABLE MARGIN	**417**	**476**	**464**	**451**	**437**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	21	22	21	21	20	20	19	18	17	16
Less fixed costs	111	111	111	111	111	0	0	0	0	0
OPERATIONAL MARGIN	**306**	**365**	**353**	**340**	**326**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	16	17	16	16	15	20	19	18	17	16
Financial costs	46	36	26	16	6	0	0	0	0	0
GROSS PROFIT	**260**	**329**	**327**	**324**	**320**	**422**	**406**	**389**	**370**	**350**
in % of sales revenue	13	15	15	8	8	14	14	15	15	16
Income (corporate) tax	56	84	90	87	92	69	92	90	49	94
NET PROFIT	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**
in % of sales revenue	10	11	11	11	11	16	15	14	15	12
CUMMULATIVE CASH	**203**	**449**	**685**	**922**	**1151**	**1504**	**1819**	**2118**	**2439**	**2695**

Debt Service Coverage Ratio(DSCR)

		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
					(Rs. in Lakhs)			
	Source							
1	Profit after Tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83
2	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54
3	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
4	**TOTAL(1+2+3)**	**360.70**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**
	Deployment							
5	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00
6	Loan Repayment	111.09	111.09	111.09	111.09	111.09	0.00	0.00
7	**TOTAL(5+6)**	**157.33**	**147.33**	**137.33**	**127.34**	**117.34**	**0.00**	**0.00**
8	**DSCR(4/7)**	**3.25**	**3.53**	**3.37**	**3.28**	**3.11**		
	Average DSCR	**2.36**						

*** What does a high debt service coverage ratio indicate?
Typically, a DSCR greater than 1 means the entity—whether an individual, company, or government —has sufficient income to pay its current debt obligations

Breakeven Point Calculation 1										
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1720.08	1722.16	1725.13	1729.08	1737.83	1753.95	1771.27	1789.90	1809.92
Break Even Percentage	**81%**	**80%**	**80%**	**80%**	**80%**	**80%**	**81%**	**82%**	**83%**	**84%**

Breakeven Point Calculation 2										
When Cash Surplus of last year is reinvested into business every year										
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						IN LAKHS				
GROSS REVENUE	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Contribution	1944.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00	2160.00
Margin in%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Costs	1573.10	1516.72	1476.88	1488.40	1492.05	1509.56	1400.28	1456.89	1490.86	1489.04
CASH SURPLUS	203.37	245.27	236.73	237.03	228.27	353.67	314.38	299.04	320.88	**255.89**
Break Even Percentage	**81%**	**70%**	**68%**	**69%**	**69%**	**70%**	**65%**	**67%**	**69%**	**69%**

The **break-even point** will **increase when** the amount of fixed costs and expenses **increases**.
In other words, if a greater proportion of lower contribution margin products are sold,
the break-even point will increase. (Contribution margin is selling price

Here we are talking about buckets which are low margin high volume sales products.

INTERNAL RATE OF RETURN (IRR)

		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
						(Rs. in Lakhs)					
1	**Total Project Cost**	**740.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2	Profit after tax	243.09	294.03	293.30	300.34	297.41	316.76	281.83	270.28	295.40	3459.47
3	Depreciation	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
4	Interest	46.24	36.24	26.24	16.25	6.25	0.00	0.00	0.00	0.00	0.00
	Net Cash Flow (2+3+4) - 1	**-379.90**	**392.60**	**374.07**	**364.37**	**345.60**	**353.67**	**314.38**	**299.04**	**320.88**	**233.26**
	Internal Rate of Return	**99%**									

*** The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero.
In other words, it is the expected compound annual rate of return that will be earned on a project or investment.
In the calculation above , an initial investment has a 99% IRR. That is equal to earning a 99% compound annual growth rate.

DISCOUNTED CASH FLOW (in lacs INR) .@ 9%

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Scrap
TOTAL CASH INFLOW	**0**	**1944**	**2160**	**2160**	**2160**	**2160**	**2160**	**2160**	**2160**	**2160**	**2160**	**100**
Inflow operation	0	1944	2160	2160	2160	2160	2160	2160	2160	2160	2160	0
Other income	0	0	0	0	0	0	0	0	0	0	0	100
TOTAL CASH OUTFLOW	**941**	**1583**	**1767**	**1786**	**1796**	**1814**	**1806**	**1846**	**1861**	**1839**	**1904**	**0**
Increase in fixed assets	551	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	364	0	0	0	0	0	0	0	0	0	0	0
Operating costs	25	1527	1684	1696	1709	1723	1738	1754	1771	1790	1810	0
Marketing and Distribution cost	0	0	0	0	0	0	0	0	0	0	0	0
Income (corporate) tax	0	56	84	90	87	92	69	92	90	49	94	0
NET CASH FLOW	**-941**	**361**	**393**	**374**	**364**	**346**	**354**	**314**	**299**	**321**	**256**	**100**
CUMULATIVE NET CASH FLOW	**-941**	**-580**	**-188**	**187**	**551**	**897**	**1250**	**1565**	**1864**	**2185**	**2440**	**2540**
Net present value	-941	304	303	265	237	206	193	158	138	136	99	199
Cumulative net present value	-941	-637	-334	-69	168	374	567	725	863	998	1097	1297

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Calculation of Income Tax Payable

Description	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Profit as per P&L A/c.	299.54	377.59	383.32	387.09	388.98	385.26	373.51	359.97	344.62	327.44
Adjusted profit		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Add: Depreciation as Per P&L Account	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64
	370.90	439.92	437.84	434.87	430.92	422.17	406.05	388.73	370.10	350.08
Less:Depreciation as Per IT	145.11	105.70	77.76	87.87	64.66	148.15	39.35	29.98	173.24	-26.65
Profit before tax	225.80	334.22	360.09	346.99	366.25	274.02	366.70	358.74	196.86	376.73
Profit as per act	225.80	334.22	360.09	346.99	366.25	274.02	366.70	358.74	196.86	376.73
Income tax	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
Tax payable	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18
Total tax Payable	**56.45**	**83.55**	**90.02**	**86.75**	**91.56**	**68.50**	**91.68**	**89.69**	**49.22**	**94.18**

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Depreciation Schedule (as per Income Tax Act)

Written Down Value Method

Rs. in Lacs

Particulars	Original Cost	Dep 2020-21	WDV	Dep 2021-22	WDV	Dep 2022-23	WDV	Dep 2023-24	WDV	Dep 2024-25	WDV
Land & site Development.	35.61	1.78	33.82	1.78	32.04	1.78	30.26	1.78	28.48	1.78	26.70
Building & Civil works	154.08	15.41	138.67	13.87	124.80	12.48	112.32	11.23	101.09	10.11	90.98
Plant & Machinery	417.89	125.37	292.52	87.76	204.77	61.43	243.34	73.00	170.34	51.10	119.24
Furniture & Fixtures	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
Office Equipment	12.75	1.27	11.47	1.15	10.33	1.03	9.29	0.93	8.36	0.84	7.53
	633.07	**145.11**	**487.96**	**105.70**	**382.27**	**77.76**	**404.51**	**87.87**	**316.64**	**64.66**	**251.97**

Particulars	WDV	Dep 2025-26	WDV	Dep 2026-27	WDV	Dep 2027-28	WDV	Dep 2028-29	WDV	Dep 2029-30	WDV
Land & site Development.	26.70	1.78	24.92	1.78	23.14	1.78	21.36	1.78	19.58	1.78	17.80
Building & Civil works	90.98	9.10	81.88	8.19	73.69	7.37	66.33	6.63	59.69	5.97	53.72
Plant & Machinery	119.24	135.77	93.46	28.04	65.43	19.63	45.80	163.74	-117.94	-35.38	-82.56
Furniture & Fixtures	7.53	0.75	6.77	0.68	6.10	0.61	5.49	0.55	4.94	0.49	4.44
Office Equipment	7.53	0.75	6.64	0.66	5.98	0.60	5.38	0.54	4.84	0.48	4.36
	251.97	**148.15**	**213.69**	**39.35**	**174.34**	**29.98**	**144.35**	**173.24**	**-28.88**	**-26.65**	**-2.23**

Calculation of Depreciation

Description of Asset	Value	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total Dep	WDV
Land & Site Developt.	35.61	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	17.80	17.80
Buildings	154.08	7.70	7.32	6.95	6.61	6.27	5.98	5.68	5.39	5.13	4.87	61.90	92.18
Plant & Machinery	417.89	58.50	50.31	43.27	37.21	32.00	27.52	23.67	20.36	17.51	15.05	325.41	92.48
Additions					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
								0.00	0.00	0.00	0.00	0.00	0.00
											0.00	0.00	0.00
Sub total													
Furniture & Fixtures	12.75	2.10	1.77	1.48	1.25	1.05	0.88	0.74	0.62	0.52	0.44	10.85	1.90
Office Equipment	12.75	1.27	1.15	1.03	0.93	0.84	0.75	0.68	0.61	0.55	0.49	8.30	4.44
Total	633.07	71.37	62.33	54.52	47.77	41.94	36.91	32.54	28.76	25.48	22.64	424.26	208.81

Value of assets	633.07	561.70	499.38	444.86	397.08	355.14	318.23	285.68	256.92	231.44	208.81		

Rates of Depreciation(%)	
Buildings & Civil works	5
Plant & Machinery	14
Furniture & Fixtures	16
office Equipment	10

Land & Site Development is written off over the period of 20 YEARS

INTEREST CALCULATION

PROJECT COST	740.59
EQUITY	185.15
DEBT	555.44

INTEREST RATE	9.00%
REPAYMENT PERIOD IN YRS	5

INTEREST CALC QRTRLY		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	YEAR6	YEAR7	YEAR 8	YEAR 9	YEAR 10	YEARXI
	QRTR1											
OPENING BALANCE		555	444	333	222	111	0	0	0	0	0	0
INTEREST		12	10	7	5	2	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28		0		0		0
CLOSING BALANCE		528	417	305	194	83	0	0	0	0	0	0
	QRTR2											
OPENING BALANCE		528	417	305	194	83	0	0	0	0	0	0
INTEREST		12	9	7	4	2	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		500	389	278	167	56	0	0	0	0	0	0
	QRTR3											
OPENING BALANCE		500	389	278	167	56	0	0	0	0	0	0
INTEREST		11	9	6	4	1	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		472	361	250	139	28	0	0	0	0	0	0
	QRTR4											
OPENING BALANCE		472	361	250	139	28	0	0	0	0	0	0
INTEREST		11	8	6	3	1	0	0	0	0	0	0
REPAYMENT		28	28	28	28	28	0	0	0	0	0	0
CLOSING BALANCE		444	333	222	111	0	0	0	0	0	0	0
YEARLY REPAYMENT												
PRINCIPAL		111	111	111	111	111	0	0	0	0	0	0
INTEREST		46	36	26	16	6	0	0	0	0	0	0
TOTAL		157	147	137	127	117	0	0	0	0	0	0

RATE

PL & MAC	0.115
BUILDINGS	0.04

	YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	YEAR6	YEAR7
OPENING VALUE							
PL & MAC	0	0	0	0	0	0	0
BUILDINGS	0	0	0	0	0	0	0
DEPRECIATION							
PL & MAC	0	0	0	0	0	0	0
BUILDINGS	0	0	0	0	0	0	0
CLOSING VALUE							
PL & MAC	0	0	0	0	0	0	0
BUILDINGS	0	0	0	0	0	0	0
TOTAL DEPRECIATION	0	0	0	0	0	0	0

SALARIES & ALLOWANCES

For all 3 Shifts — in Lacs

DESIGNATION	NO	REMUN/ANNUM	PERKS @30%	TOTAL
GENERAL MANAGER	1	5,00,000	1,50,000	7
IMM DEPT				
PRODUCTION MANAGER	0	0	0	0
SHIFT ENGINEER	1	3,00,000	90,000	4
SHIFT OPERATORS	3	2,00,000	60,000	8
PRODUCTION HELPERS	3	1,00,000	30,000	4
LOADING	3	80,000	24,000	3
Assembly Department				
Assembly Helpers	4	1,00,000	30,000	5
Stacking & Despatch Department				
Stacking & Despatch helpers	4	1,00,000	30,000	5
STORES				
STORES MANAGER	0	0	0	0
STORE KEEPERS	1	1,80,000	54,000	2
DESPATCH STAFF	1	1,30,000	39,000	2
QUALITY CONTROL & TESTING				
INCHARGE	1	4,50,000	1,35,000	6
INSPECTORS	2	3,00,000	90,000	8
GENERAL MC MAINTENANCE	1	1,80,000	54,000	2
GENERAL MOULD MAINTENANCE	1	1,80,000	54,000	2
OFFICE EXECUTIVES				
PURCHASE & COMMERCIAL	0	2,50,000	75,000	0
ACCOUNTS	1	2,50,000	75,000	3
ADMINISTRATION	1	2,50,000	75,000	3
OFFICE STAFF	1	1,80,000	54,000	2
SALES & MARKETING	1	1,80,000	54,000	2
SECURITY STAFF	3	1,00,000	30,000	4
TOTAL	33			69

Other expenses

	Basis		
REPAIR & MAINT	@3% of assets	3%	22.22
ADMIN EXP	@2% of income	2%	38.88
MISCELLANEOUS	@1% of Income	1%	19.44

CASH FLOW FOR FINANCIAL MANAGEMENT (in Lacs INR)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Scrap sales
TOTAL CASH INFLOW	**741**	**1,944**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**2,160**	**100**
Inflow funds	741	0	0	0	0	0	0	0	0	0	0	0
Inflow operation	0	1,944	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	0
Other income	0	0	0	0	0	0	0	0	0	0	0	100
TOTAL CASH OUTFLOW	**941**	**1,527**	**1,684**	**1,696**	**1,709**	**1,723**	**1,738**	**1,754**	**1,771**	**1,790**	**1,810**	**0**
Increase in fixed assets	551	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	364.40	0	0	0	0	0	0	0	0	0	0	0
Operating costs	25.49	1,527	1,684	1,696	1,709	1,723	1,738	1,754	1,771	1,790	1,810	0
Marketing and Distribution cost	0	0	0	0	0	0	0	0	0	0	0	0
Income tax	0	56.45	83.55	90.02	86.75	91.56	68.50	91.68	89.69	49.22	94.18	0
Financial costs	0	46	36	26	16	6	0	0	0	0	0	0
Loan repayment	0	111.09	111.09	111.09	111.09	111.09	0.00	0.00	0.00	0.00	0.00	0
SURPLUS (DEFICIT)	**-741**	**203**	**245**	**237**	**237**	**228**	**354**	**314**	**299**	**321**	**256**	**100**
CUMULATIVE CASH BALANCE	**0**	**203**	**449**	**685**	**922**	**1,151**	**1,504**	**1,819**	**2,118**	**2,439**	**2,695**	**2,795**