

DISPOSABLE PLASTIC CUP



1.0 INTRODUCTION

Disposable Plastic Cups are widely used in hotel, homes and restaurants for drinking tea, coffee, beer, juices, soft drinks etc. They are available in the market in various sizes, thickness and volumes catering to different needs of the client. These products are conveniently used for serving eatables during family functions etc. They are fast replacing conventional cups, containers etc., and enjoy significant advantage over conventional cups like attractive look, low weight, ease of transportation, low permeability. With rapidly changing life style and food habits of urban class, the demand for disposable cups etc., are increasing at a rapid rate. Further they avoid the drudgery of cleaning as against conventional glass container or ceramic cup. Because of these features, organisations like Airlines, Railways, etc., have switched over to use of disposable cups for serving coffee, tea etc. However, the major customer of disposable cups continues to be ice cream industry.

This project profile is for setting up of a disposable cups and glasses making unit, based on 300 working days per annum and 8 working hours per day. The installed production capacity of the unit per annum is as follows;

Disposable Cups - 30.00 Lakhs Nos.

Disposable Glass - 30.00 Lakhs Nos.

2.0 MARKET POTENTIAL

Disposable Cups and Glasses have good demand potential both in urban as well as in rural markets. These

products are mostly used during social functions, religious gatherings, parties, marriages, outings, in sweet shops, by caterers etc. The products have many advantages and are hence preferred as compared to standard utensils/crockery for serving eatables. They can easily be disposed off after use and hence save a lot of labour as far as cleaning/drying of utensils are concerned. These are easily transportable and easy to handle. In our country people are religious and organize functions throughout the year. All such occasions call for social gathering and celebrations with meals, snacks sweets being served. Further, people organizes marriages, celebrates birthdays and other family functions on a regular basis. Sweet shops and small eateries can be found at every street corner and all such joints use these disposable plates, cups and glasses. Thus keeping in view the culture of the people and the habits there is a vast market for the products not only in urban areas but also in rural areas.

3.0 PROCESS DETAILS

The manufacturing process involves, feeding of thermoplastic sheet in the thermophorming machine in the form of a continuous roll. The conveyor chains carry the sheet through the heater assembly to the forming table. The heated sheet is punched to form the shape of the mould. The cups thus formed are stocked and the punched waste sheet is wound on scrap sheet winder. To get printed products, the sheets are printed before forming into cups and glasses. As the raw material wastage is very high the scrap needs to be recycled. The scrap can be ground and extruded in sheet extruder.

4.0. COST OF THE PROJECT

The estimated project cost is given below:

(Rs. in lacs)

Particulars	Amount (Rs)
Land & Site development	Own Land/On Lease
Building & Civil works	6.60
Plant & Machinery	28.00
Misc. Fixed assets	3.14
Preliminary & pre-operative expenses	1.87
Contingencies & escalation @ 3%	1.13
Working capital	0.87
TOTAL	41.60

4.1 Land & Site Development: Total Land: 3,000 Sq. Ft. ; Covered Area: 2,000 Sq. Ft.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sq. Ft.)	Rate (Rs)	Amount (Rs)
Factory Shed, Storage Go-down and Office	2000	275	550000
Sub total			550000
Add: Electrification, water supply and sanitation @ 20%			110000
TOTAL			660000
Say (Rs. in lacs)			6.60

4.3 Plant & Machinery: Details of plant & machinery are given below.

Particulars	Qty	Amount (Rs)
Automatic thermoforming Machine	1	2450000
Scrap Grinder Machine with Motor	1	
Compact Sheet Line Extruder	1	
Dies for Cup and Glass	2	
Air Compressor (2 HP)	1	
Chilling Plant (3 Ton)	1	
DG Set 30 KV	1	
Workshop Equipment	LS	50000
Sub total		2500000
Add: Installation, transportation, etc @ 10%		250000
TOTAL		2800000
Say (Rs. in lacs)		28.00

4.4 Misc. Fixed assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Electric Transformer	1	225000	225000
Furniture & fixtures including Cutting Tables etc	LS	--	25000
Miscellaneous items	LS	--	35000
Sub total			285000
Add: Installation, transportation, etc @ 10%			28500
TOTAL			313500
Say (Rs. in lacs)			3.14

4.5 Contingencies & escalation: Contingencies & escalation has been assumed at 3% of the cost of land & site development, building & civil works, plant & machinery and miscellaneous fixed assets.

4.6 Preliminary & pre-operative expenses: Details of preliminary & pre-operative expenses are given below.

(Rs. In lacs)

Particulars	Amount (Rs)
Travelling expenses	18000
Professional & other fees	50000
Interest during implementation	88670
Miscellaneous expenses	30000
TOTAL	186670
Say (Rs. in lacs)	1.87

4.7 Working capital: Details of working capital are given below.

(Rs. in lacs)

	Period (Days)	Total Current Assets		
		Year 1	Year 2	Year 3
Raw materials	15	0.10	0.11	0.13
Power & Utility	30	0.19	0.22	0.25
Salary	30	0.55	0.56	0.56
Finished Goods	15	0.51	0.55	0.59
Receivables	15	0.81	0.95	1.08
Total		2.17	2.39	2.61
Working capital margin in Year 1 (40%)	0.87			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

(Rs. in lacs)

Particulars	Percent	Amount
<u>EQUITY</u>		
A. Equity from Promoters	40%	16.64
B. Subsidy from Central/State Govt.	-	
<u>DEBT</u>		
Term Loan from Banks/Financial Institutions	60%	24.96
TOTAL	100%	41.60

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
<u>A. INCOME</u>							
Production capacity (Nos./ annum)	6000000	6000000	6000000	6000000	6000000	6000000	6000000
Capacity utilisation	60%	70%	80%	80%	80%	80%	80%
Production/ annum at capacity utilisation	3600000	4200000	4800000	4800000	4800000	4800000	4800000
Total income/annum	19.80	23.10	26.40	26.40	26.40	26.40	26.40
<u>B. OPERATING EXPENSES</u>							
Raw materials	2.39	2.79	3.19	3.19	3.19	3.19	3.19
Power & Utility	2.31	2.69	3.08	3.08	3.08	3.08	3.08
Salary	6.72	6.75	6.79	6.82	6.86	6.89	6.92
Repair & Maintenance	0.67	0.69	0.70	0.71	0.73	0.74	0.76
Other Expenses	0.40	0.46	0.53	0.53	0.53	0.53	0.53
Total Operating Expenses	12.49	13.39	14.29	14.33	14.38	14.43	14.48

Operating profit	7.31	9.71	12.11	12.07	12.02	11.97	11.92
C. FINANCIAL EXPENSES							
Depreciation	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Interest on Term Loan	2.00	1.84	1.51	1.18	0.85	0.51	0.18
Interest on Working Capital Loan	0.10	0.11	0.13	0.13	0.13	0.13	0.13
Net Profit	3.31	5.86	8.58	8.86	9.15	9.43	9.72
Net cash accruals	5.21	7.75	10.48	10.76	11.05	11.33	11.61
Principal Repayment	0.00	4.16	4.16	4.16	4.16	4.16	4.16

6.1 Production capacity and Sales Realisation: Total production of Disposable Cups and Glasses at 100% capacity utilization is estimated as below.

Products	Quantity
Disposable Plastic Cups	3000000
Disposable Plastic Glass	3000000
Total production per annum at 100% capacity (In Nos.)	6000000

Particulars	Quantity	Average Rate per Unit	Amount
Disposable Plastic Cups	3000000	0.50	1500000
Disposable Plastic Glass	3000000	0.60	1800000
Total Sale Turnover per annum at 100% capacity (In Rs.)			3300000

6.2 Raw materials: Total expenses on raw materials at 100% capacity utilization are estimated as below.

Particulars	Quantity	Average Rate per Unit	Amount
High Impact Polystyrene (HPIS)	15 MT	25000	375000
Packaging Material	LS	--	24000
Expenses on raw material at 100% capacity (Rs)			399000

6.3 Power & Utility: Total expenses on power & utility at 100% capacity utilization is estimated as below.

Particulars	Quantity	Power (Kw)	Total (Kw)
Plant & machinery (Total HP of 30)	—	22.38	22.38
General Lighting	20	0.10	2.00
Total power requirement/ day (Kw)			24.38
No. of hrs/day	8		
No. of days/annum	300		
Annual power requirement (kwh)	58512		
Rate per unit (Rs)	3.50		
Expenses on power (Rs)	204792		

Estimate of Diesel required for Generator

No of working hours per day	2
Diesel consumption (litres per hours)	6
No. of days/annum	300
Annual requirement (in litres)	3600
Diesel Price per litre	50
Expenses on diesel (Rs)	180000
Expenses on power & utility at 100% capacity (Rs)	384792

6.4 Salary: Total expenses on salary in the 1st year are estimated as given below. It is assumed that salary expenses will increase @ 0.5% every subsequent year.

Particulars of Employees	Numbers	Salary/ Month (Rs)	Cost/ annum (Rs)
Supervising Manager	1	8000	96000
Accountant cum Store Keeper	1	6000	72000
Sales Persons	2	6000	144000
Machine Operator/Skilled Worker	2	5000	120000
Semi skilled workers	2	4000	96000
Unskilled workers	4	3000	144000
Expenses on salary in the 1st year (Rs)			672000

6.5 Repair & Maintenance: Total expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 2% every subsequent year.

(Rs. in lacs)			
Particulars	Cost (Rs)	Rate	Amount (Rs)
Building & Civil works	6.60	1.00%	0.07
Plant & Machinery	28	2.00%	0.56
Misc. Fixed assets	3.14	1.50%	0.05
Expenses on repair & maintenance in year 1			0.67

6.6 Other Expenses: Other expenses have been assumed at 2% of sales realisation.

6.7 Depreciation: Depreciation has been calculated by straight line method. The details of calculation are given below.

(Rs in lacs)			
Description	Cost (Rs)	Rate	Amount/ annum (Rs)
Building & Civil works	6.60	3.34%	0.22
Plant & Machinery	28.00	5.28%	1.48
Misc. Fixed assets	3.14	6.33%	0.20
TOTAL			1.90

6.8 Interest on term loan & principal repayment: Interest rate has been assumed at 8%. Duration of Loan repayment has been considered for a period of 7 years including moratorium period of 1 year with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)								
Month	Year	1	2	3	4	5	6	7
Month 1	Opening balance	24.96	24.96	20.80	16.64	12.48	8.32	4.16
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest (8%)	0.17	0.17	0.14	0.11	0.08	0.06	0.03

	Closing balance	24.96	24.61	20.45	16.29	12.13	7.97	3.81
Month 2	Opening balance	24.96	24.61	20.45	16.29	12.13	7.97	3.81
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.16	0.14	0.11	0.08	0.05	0.03
	Closing balance	24.96	24.27	20.11	15.95	11.79	7.63	3.47
Month 3	Opening balance	24.96	24.27	20.11	15.95	11.79	7.63	3.47
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.16	0.13	0.11	0.08	0.05	0.02
	Closing balance	24.96	23.92	19.76	15.60	11.44	7.28	3.12
Month 4	Opening balance	24.96	23.92	19.76	15.60	11.44	7.28	3.12
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.16	0.13	0.10	0.08	0.05	0.02
	Closing balance	24.96	23.57	19.41	15.25	11.09	6.93	2.77
Month 5	Opening balance	24.96	23.57	19.41	15.25	11.09	6.93	2.77
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.16	0.13	0.10	0.07	0.05	0.02
	Closing balance	24.96	23.23	19.07	14.91	10.75	6.59	2.43
Month 6	Opening balance	24.96	23.23	19.07	14.91	10.75	6.59	2.43
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.15	0.13	0.10	0.07	0.04	0.02
	Closing balance	24.96	22.88	18.72	14.56	10.40	6.24	2.08
Month 7	Opening balance	24.96	22.88	18.72	14.56	10.40	6.24	2.08
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.15	0.12	0.10	0.07	0.04	0.01
	Closing balance	24.96	22.53	18.37	14.21	10.05	5.89	1.73
Month 8	Opening balance	24.96	22.53	18.37	14.21	10.05	5.89	1.73
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.15	0.12	0.09	0.07	0.04	0.01
	Closing balance	24.96	22.19	18.03	13.87	9.71	5.55	1.39
Month 9	Opening balance	24.96	22.19	18.03	13.87	9.71	5.55	1.39
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.15	0.12	0.09	0.06	0.04	0.01
	Closing balance	24.96	21.84	17.68	13.52	9.36	5.20	1.04
Month 10	Opening balance	24.96	21.84	17.68	13.52	9.36	5.20	1.04
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.15	0.12	0.09	0.06	0.03	0.01
	Closing balance	24.96	21.49	17.33	13.17	9.01	4.85	0.69
Month 11	Opening balance	24.96	21.49	17.33	13.17	9.01	4.85	0.69
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.14	0.12	0.09	0.06	0.03	0.00
	Closing balance	24.96	21.15	16.99	12.83	8.67	4.51	0.35
Month 12	Opening balance	24.96	21.15	16.99	12.83	8.67	4.51	0.35
	Repayment	0.00	0.35	0.35	0.35	0.35	0.35	0.35
	Interest	0.17	0.14	0.11	0.09	0.06	0.03	0.00
	Closing balance	24.96	20.80	16.64	12.48	8.32	4.16	0.00
Principal Repayment		0.00	4.16	4.16	4.16	4.16	4.16	4.16
Interest		2.00	1.84	1.51	1.18	0.85	0.51	0.18

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	6	7
Profit After Tax (Net Profit)	3.31	5.86	8.58	8.86	9.15	9.43	9.72
Depreciation	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Interest	2.00	1.84	1.51	1.18	0.85	0.51	0.18
Total	7.20	9.60	11.99	11.94	11.89	11.84	11.79
Interest	2.00	1.84	1.51	1.18	0.85	0.51	0.18
Loan repayment	0.00	4.16	4.16	4.16	4.16	4.16	4.16
Total	2.00	6.00	5.67	5.34	5.01	4.67	4.34
DSCR	3.61	1.60	2.11	2.24	2.38	2.53	2.72

Average DSCR = 2.31

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	19.80	23.10	26.40
B. Variable cost			
Raw materials	2.39	2.79	3.19
Power & Utility	2.31	2.69	3.08
Other expenses	0.40	0.46	0.53
Interest on Working Capital Loan	0.10	0.11	0.13
Total variable cost	5.20	6.06	6.92
C. Contribution (A-B)	14.60	17.04	19.48
D. Fixed & Semi-fixed Costs			
Salary	6.72	6.75	6.79
Repair & maintenance	0.67	0.69	0.70
Interest on Term Loan	2.00	1.84	1.51
Depreciation	1.90	1.90	1.90
Total fixed cost	11.29	11.18	10.90
E. BREAK EVEN POINT	77.32%	65.63%	55.95%
F. BEP at operating capacity	46.39%	45.94%	44.76%
G. Cash BEP	38.60%	38.15%	36.96%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6	7
CASH OUTFLOW								
Capital Expenditure	38.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	2.17	0.22	0.22	0.00	0.00	0.00	0.00
Total (A)	38.87	2.17	0.22	0.22	0.00	0.00	0.00	0.00
CASH INFLOW								
Profit After Tax		3.31	5.86	8.58	8.86	9.15	9.43	9.72
Add: Depreciation		1.90	1.90	1.90	1.90	1.90	1.90	1.90
Add: Interest		2.00	1.84	1.51	1.18	0.85	0.51	0.18
Add: Salvage Value								
Total (B)	0.00	7.20	9.60	11.99	11.94	11.89	11.84	11.79

NET FLOW (B-A)	-38.87	5.04	9.37	11.77	11.94	11.89	11.84	11.79

IRR = 22%

Sl. No.	Name of the Machinery Suppliers	Communication Address
1.	M/s Klockner Windsor India Ltd.	E-6, U. Z. Road, Thane Industrial estate, Thane, Maharashtra Pin- 400 604
2.	M/s Wonderpack Industries P Ltd.	72, 1st floor, Shivalaya Mansion, Hamington Road, Mumbai, Maharashtra, Pin-400 008
3.	M/s Isimat India Screen Printing Machinery Pvt. Ltd.	29, Apurva Industrial Estate, Makvana Road, Andheri Kurla Road, Andheri (East), Mumbai, Maharashtra,
4.	M/s Solex Machines	C, 1/510, GIDC, Gundlav, Dist- Valsad, Gujarat, Pin- 396 035