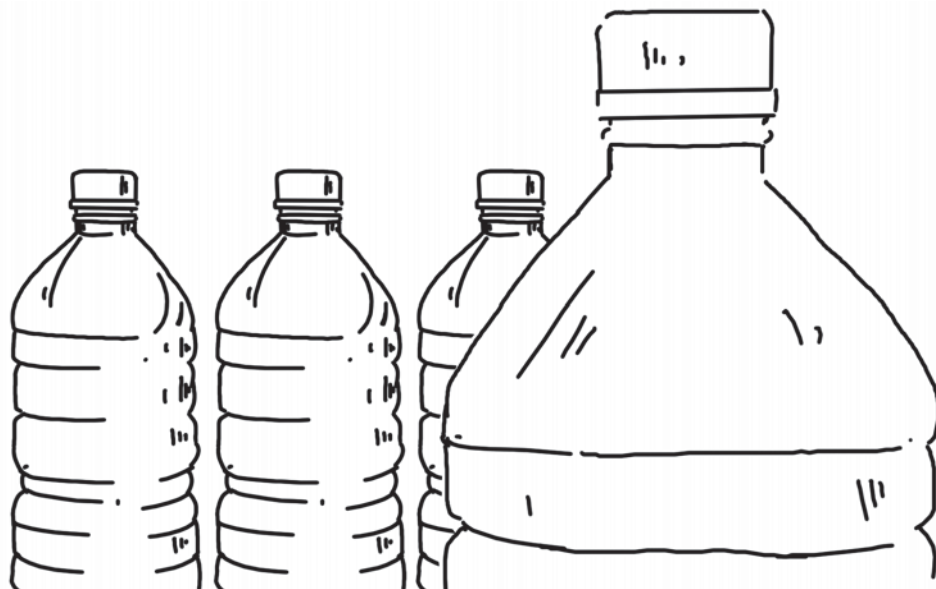


PACKAGED DRINKING WATER



1.0 INTRODUCTION

The water available from untreated sources such as Well, Boreholes and Spring is generally not hygienic and safe for drinking. Thus it is desirable and necessary to purify the water and supply under hygienic conditions for human drinking purpose.

As the name implies, mineral water is the purified water fortified with requisite amounts of minerals such as Barium, Iron, Manganese, etc. which can be absorbed by human body. It is either obtained from natural resources like spring and drilled wells or it is fortified artificially by blending and treating with mineral salts. The mineral water is manufactured and packed under hygienic conditions in properly washed and cleaned bottles in sterilised conditions. These are then sold to consumers as packaged water.

This project profile is for production of packaged drinking water with Reverse Osmosis water treatment system and having integrated PET Blowing system for manufacturing of pet bottles and jars. The processing capacity of the plant is 5000 litres per hour.

2.0 MARKET POTENTIAL

The Indian market for packaged drinking water is estimated at about Rs 1,000 Crore and is growing at a whopping rate of 40 per cent. According to a national-level study, there are more than

200 bottled water brands in India and among them, nearly 80 per cent are local brands. In fact, making bottled water is today a cottage industry in the country. Leave alone the metros, where a bottled-water manufacturer can be found even in a one-room shop, in every medium and small city and even in some prosperous rural areas there are bottled water manufacturers.

While India ranks in the top 10 largest bottled water consumers in the world, its per capita per annum consumption of bottled water is estimated to be five litres, which is comparatively lower than the global average of 24 litres. Today it is one of India's fastest growing industrial sectors. Between 1999 and 2004, the Indian bottled water market grew at a compound annual growth rate (CAGR) of 25 per cent - the highest in the world. The total annual bottled water consumption in India had tripled to 5 billion liters in 2004 from 1.5 billion liters in 1999. Global consumption of bottled water was nearing 200 billion liters in 2006.

3.0 PROCESS DETAILS

Raw water stored in Storage Tanks is treated through the following process.

- (i) Multi graded sand filter: To remove suspended matter.
- (ii) Activated carbon filter: To remove suspended matter from the water.

(iii) Antiscalant Dosing System: To prevent scale deposition from desalting element, by means of Antiscalant Dosing in raw water.

(iv) Ultraviolet Disinfection System: To remove biological impurities from the raw water.

(v) Micron Filtration: To remove micron particles from the raw water.

(vi) Osmotic pressure System (High Pressure Pump): To create osmotic pressure in raw water.

(vii) Desalination System by Reverse Osmosis Membrane Element: To desalt the raw water i.e. to reduce total dissolve solids.

(viii) Ion Controlling System: To adjust the minerals contains in the Process water by means of mixing of raw water in the desalted treated water.

(ix) Storage of Treated Water: To remove back pressure in R. O. Membrane elements.

(x) Fine Polishing Filtration: To filter water from 2 micron to

0.2 micron rating & achieve the crystal clear filtered mineral water.

(xi) UV system: To kill the bacteria from fine water.

(xii) Ozonization: To Prevent the biological & micro organism growth in the stagnant water.

(xiii) Rinsing Filling & Capping: To rinse, fill & capping of the bottle of mineral water.

(xiv) Bottle Manufacturing Machine: To manufacture the PET bottle from Pet granules.

(xv) Reverse Osmosis Membrane Cleaning System: To clean the membrane when it comes in maintenance stage.

(xvi) Packing of mineral water in Bottles, container or polypack: To pack the final production in the selected packing and sell it in the market.

4.0 COST OF THE PROJECT

The estimated project cost is given below.

		(Rs. in lacs)
Particulars	Amount (Rs)	
Land & Site Development	4.00	
Building & Civil works	25.14	
Plant & Machinery	111.48	
Misc. Fixed Assets	21.37	
Preliminary & Pre-operative Expenses	15.90	
Contingencies & Escalation @ 3%	4.86	
Working Capital	13.98	
TOTAL	196.72	

4.1 Land & Site Development: Details of land & site development are given below.

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Site levelling, approach road, fencing, etc.	4000	100	400000
Say (Rs. in lacs)			4.00

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

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Factory Building including laboratory, store room, etc (Single storied RCC building)	250	8500	2125000
Genset Room (Brick wall, CGI sheet roof, Concrete Floor)	30	4000	120000
Sub total			2245000
Add: Electrification, water supply and sanitation @ 12%			269400
TOTAL			2514400
Say (Rs. in lacs)			25.14

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Water Treatment Plant with R.O system UV sterilization system, capacity 5000 ltr/hr, with all accessories	1	2275000	2275000
Other equipments (Ozone Generator, Storage Tanks, Pump, Pipe Fittings, Batch Coding Machine & laboratory equipments)	1	1860000	1860000
Automatic Filling Machine complete with accessories	1	4450000	4450000
Pet Blowing System complete with accessories	1	1359000	1359000
Miscellaneous items	LS	LS	100000
Sub total			10044000
Add: Installation, transportation, etc @ 10%			1004400
TOTAL			11148400
Say (Rs. in lacs)			111.48

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Installation of deep bore tubewell	1	1500000	1500000
62.5 KVA DG Set	1	385000	385000
Furniture & fixtures	LS	LS	100000
Miscellaneous items	LS	LS	50000
Sub total			2035000
Add: Installation, transportation, etc @ 5%			101750
TOTAL			2136750
Say (Rs. in lacs)			21.37

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	0.50
Professional & other fees	0.50
Interest during implementation	14.40
Miscellaneous expenses	0.50
TOTAL	15.90

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

(Rs. in lacs)

	Period (Days)	Amount (Rs)		
		Year 1	Year 2	Year 3
Consumables	30	12.94	15.53	18.11
Power & fuel	30	0.38	0.45	0.53
Salary	30	1.68	1.69	1.69
Finished Goods	15	9.17	10.81	12.45
Receivables	15	10.78	12.94	15.09
Total		34.94	41.41	47.88
Working Capital Margin in Year 1 (40%)	13.98			

5.0 MEANS OF FINANCE

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

(Rs. in lacs)

Particulars	Percent	Amount (Rs)
<u>EQUITY</u>		
A. Equity from Promoters	40%	78.69
B. Subsidy from Central/State Govt.	-	
<u>DEBT</u>		
Term Loan from Banks/FIs	60%	118.03
TOTAL	100%	196.72

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 (litres/annum)	102.89	102.89	102.89	102.89	102.89	102.89	102.89
Capacity utilisation	50%	60%	70%	70%	70%	70%	70%
Income from sales/annum	262.36	314.83	367.30	367.30	367.30	367.30	367.30
<u>B. OPERATING EXPENSES</u>							
Raw Materials & Consumables	157.41	188.90	220.38	220.38	220.38	220.38	220.38
Power & Fuel	4.59	5.51	6.42	6.42	6.42	6.42	6.42
Salary	20.40	20.50	20.60	20.71	20.81	20.92	21.02
Repair & Maintenance	3.92	4.03	4.15	4.28	4.41	4.54	4.68
Franchise Fee	26.24	31.48	36.73	36.73	36.73	36.73	36.73
Selling & Administrative Expenses	7.87	9.44	11.02	11.02	11.02	11.02	11.02
Miscellaneous Expenses	2.62	3.15	3.67	3.67	3.67	3.67	3.67
Total Operating Expenses	223.05	263.02	302.99	303.21	303.44	303.68	303.92
Less: Working expenses capitalised	13.98	0.00	0.00	0.00	0.00	0.00	0.00

Operating profit	53.28	51.81	64.31	64.09	63.85	63.62	63.38
C. FINANCIAL EXPENSES							
Depreciation	8.08	8.08	8.08	8.08	8.08	8.08	8.08
Interest on Term Loan	16.23	14.99	12.28	9.58	6.88	4.17	1.47
Interest on Working Capital Loan	3.35	3.98	4.60	4.60	4.60	4.60	4.60
Net Profit	25.62	24.77	39.35	41.83	44.30	46.77	49.24
Net cash accruals	33.70	32.85	47.43	49.91	52.38	54.85	57.32
Principal Repayment	0.00	19.67	19.67	19.67	19.67	19.67	19.67

6.1 Production capacity: Total production of packaged water at 100% capacity utilization is estimated as below.

Rated plant capacity (litres/hr of treated water)	5000
No. of hrs/day	8
No. of days/annum	300
Total quantity (litres)	12000000
Less: 5% towards forced outage	600000
Less: 5% towards auxiliary consumption	570000
Less: Loss during transit @ 5%	541500
Total production per annum at 100% capacity (litres)	10288500

6.2 Income from sales: Total income from sales at 100% capacity utilization is estimated as below.

Product	Proportion	Itrs/ annum	Qty/ year	Rate (Rs)	Amount (Rs)
A. Pet Bottles	50%	5144250			
i. 500 ml	40%	2057700	4115400	5	20577000
ii. 1 litre	40%	2057700	2057700	8	16461600
iii. 2 litres	20%	1028850	514425	10	5144250
B. Water Jars (20 litres)	50%	5144250	257213	40	10288500
Income from sales at 100% capacity (Rs)					52471350

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

Particulars	Qty/ year	Rate (Rs)	Amount (Rs)
Cost of pre-form			
i. 500 ml	4115400	3.15	12963510
ii. 1 litre	2057700	3.65	7510605
iii. 2 litres	514425	4.35	2237749
iv. Water jars (Refill stock)	10289	140.00	1440390
Caps (Water jars)	10289	2.50	25721
Caps (Pet bottles)	6687525	0.50	3343763
Label print for pet bottles	6687525	0.35	2340634
Heat shrink seal for pet bottles	6687525	0.15	1003129
Total			30865500
Add: Packing materials, chemicals, etc @ 2%			617310
Expenses on consumables at 100% capacity (Rs)			31482810

6.4 Power & fuel: Total expenses on power & fuel at 100% capacity utilization is estimated as below.**A. Expenses on power**

Particulars	Quantity	Power (Kw)	Total (Kw)	Hrs/ day	kwh
Plant & machinery	1	85.00	85.00	8	680
General Lighting	14	0.10	1.40	8	11
Total power requirement/ day (Kwh)					691
No. of days/annum	300				
Average load factor	70%				
Proportion running on power	80%				
Rate per unit (Rs)	5.00				
Expenses on power (Rs)	725760				

B: Estimate of Diesel required for Generator

Hours/day	8
Diesel consumption (litres per hours)	8
No. of days/annum	300
Proportion running on diesel	20%
Diesel Price per liter	50
Expenses on diesel (Rs)	192000
Expenses on power & fuel at installed capacity (Rs)	917760

6.5 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)
Manager	1	15000	180000
Technicians/machine operators	5	10000	600000
Sales staff	5	8000	480000
Administrative staff/Assistants	5	5000	300000
Unskilled workers/helpers	10	4000	480000
Expenses on salary in the 1st year (Rs)			2040000

6.6 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 @ 3% every subsequent year.

(Rs. in lacs)

Particulars	Cost (Rs)	Rate	Amount (Rs)
Building & Civil Works	25.14	1%	0.25
Plant & Machinery	111.48	3%	3.34
Misc. Fixed assets	21.37	2%	0.32
Expenses on repair & maintenance in year 1			3.92

6.7 Franchisee Fee: Franchisee fee has been assumed at 10% of sales realisation.**6.8 Selling & Administrative Expenses:** Selling & administrative expenses have been assumed at 3% of sales.**6.9 Miscellaneous Expenses:** Miscellaneous expenses have been assumed at 1% of sales.**6.10 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	25.14	3.34%	0.84
Plant & Machinery	111.48	5.28%	5.89
Misc. Fixed Assets	21.37	6.33%	1.35
TOTAL			8.08

6.11 Interest on Term Loan & Principal Repayment: Interest rate has been assumed at 13.75%. 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	118.03	118.03	98.36	78.69	59.02	39.34	19.67
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest (13.75%)	1.35	1.35	1.13	0.90	0.68	0.45	0.23
	Closing balance	118.03	116.39	96.72	77.05	57.38	37.71	18.03
Month 2	Opening balance	118.03	116.39	96.72	77.05	57.38	37.71	18.03
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.33	1.11	0.88	0.66	0.43	0.21
	Closing balance	118.03	114.75	95.08	75.41	55.74	36.07	16.39
Month 3	Opening balance	118.03	114.75	95.08	75.41	55.74	36.07	16.39
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.31	1.09	0.86	0.64	0.41	0.19
	Closing balance	118.03	113.12	93.44	73.77	54.10	34.43	14.75
Month 4	Opening balance	118.03	113.12	93.44	73.77	54.10	34.43	14.75
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.30	1.07	0.85	0.62	0.39	0.17
	Closing balance	118.03	111.48	91.80	72.13	52.46	32.79	13.11
Month 5	Opening balance	118.03	111.48	91.80	72.13	52.46	32.79	13.11
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.28	1.05	0.83	0.60	0.38	0.15
	Closing balance	118.03	109.84	90.16	70.49	50.82	31.15	11.48
Month 6	Opening balance	118.03	109.84	90.16	70.49	50.82	31.15	11.48
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.26	1.03	0.81	0.58	0.36	0.13
	Closing balance	118.03	108.20	88.53	68.85	49.18	29.51	9.84
Month 7	Opening balance	118.03	108.20	88.53	68.85	49.18	29.51	9.84
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.24	1.01	0.79	0.56	0.34	0.11
	Closing balance	118.03	106.56	86.89	67.21	47.54	27.87	8.20
Month 8	Opening balance	118.03	106.56	86.89	67.21	47.54	27.87	8.20
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.22	1.00	0.77	0.54	0.32	0.09
	Closing balance	118.03	104.92	85.25	65.57	45.90	26.23	6.56
Month 9	Opening balance	118.03	104.92	85.25	65.57	45.90	26.23	6.56
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.20	0.98	0.75	0.53	0.30	0.08
	Closing balance	118.03	103.28	83.61	63.93	44.26	24.59	4.92
Month 10	Opening balance	118.03	103.28	83.61	63.93	44.26	24.59	4.92
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.18	0.96	0.73	0.51	0.28	0.06
	Closing balance	118.03	101.64	81.97	62.30	42.62	22.95	3.28
Month 11	Opening balance	118.03	101.64	81.97	62.30	42.62	22.95	3.28
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.16	0.94	0.71	0.49	0.26	0.04
	Closing balance	118.03	100.00	80.33	60.66	40.98	21.31	1.64
Month 12	Opening balance	118.03	100.00	80.33	60.66	40.98	21.31	1.64
	Repayment	0.00	1.64	1.64	1.64	1.64	1.64	1.64
	Interest	1.35	1.15	0.92	0.70	0.47	0.24	0.02
	Closing balance	118.03	98.36	78.69	59.02	39.34	19.67	0.00

Principal Repayment	0.00	19.67	19.67	19.67	19.67	19.67	19.67
Interest	16.23	14.99	12.28	9.58	6.88	4.17	1.47

6.12 Interest on Working Capital Loan: Interest rate on working capital loan has been assumed at 16%. Details of calculation are given below.

(Rs. in lacs)

Particulars	Year 1	Year 2	Year 3
Total current assets	34.94	41.41	47.88
Bank Loan (60%)	20.96	24.85	28.73
Interest @ 16%	3.35	3.98	4.60

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	6	7	TOTAL
Profit After Tax (Net Profit)	25.62	24.77	39.35	41.83	44.30	46.77	49.24	
Depreciation	8.08	8.08	8.08	8.08	8.08	8.08	8.08	
Interest	16.23	14.99	12.28	9.58	6.88	4.17	1.47	
Total	49.93	47.84	59.72	59.49	59.26	59.02	58.78	394.04
Interest	16.23	14.99	12.28	9.58	6.88	4.17	1.47	
Loan repayment	0.00	19.67	19.67	19.67	19.67	19.67	19.67	
Total	16.23	34.66	31.96	29.25	26.55	23.84	21.14	183.63
DSCR	3.08	1.38	1.87	2.03	2.23	2.48	2.78	

Average DSCR = 2.15

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	262.36	314.83	367.30
B. Variable cost			
Raw Materials & Consumables	157.41	188.90	220.38
Power & Fuel	4.59	5.51	6.42
Franchise Fee @ 10% of income	26.24	31.48	36.73
Selling & Administrative Expenses @ 3% of income	7.87	9.44	11.02
Other expenses	2.62	3.15	3.67
Interest on Working Capital Loan	3.35	3.98	4.60
Total variable cost	202.09	242.45	282.82
C. Contribution (A-B)	60.27	72.37	84.48
D. Fixed & Semi-fixed Costs			
Salary	20.40	20.50	20.60
Repair & maintenance	3.92	4.03	4.15
Interest on Term Loan	16.23	14.99	12.28
Depreciation	8.08	8.08	8.08
Total fixed cost	48.62	47.60	45.12
E. BREAK EVEN POINT	80.68%	65.78%	53.41%
F. BEP at operating capacity	40.34%	39.47%	37.39%
G. Cash BEP	33.64%	32.77%	30.70%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6	7
CASH OUTFLOW								
Capital Expenditure	161.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	34.94	6.47	6.47	0.00	0.00	0.00	0.00
Total (A)	161.99	34.94	6.47	6.47	0.00	0.00	0.00	0.00
CASH INFLOW								
Profit After Tax		25.62	24.77	39.35	41.83	44.30	46.77	49.24
Add: Depreciation		8.08	8.08	8.08	8.08	8.08	8.08	8.08
Add: Interest		16.23	14.99	12.28	9.58	6.88	4.17	1.47
Add: Salvage Value								
Total (B)	0.00	49.93	47.84	59.72	59.49	59.26	59.02	58.78
NET FLOW (B-A)	-161.99	14.99	41.37	53.25	59.49	59.26	59.02	58.78

IRR = 20%

MACHINERY SUPPLIERS

- (a) MacLean Equipments
B- 39, Sector- 57, Noida - 201 301, Uttar Pradesh, India
- (b) Aguapuro Equipments Pvt. Ltd.
416 & 417, Building No 9, Jogani Industrial Complex, V N Purav Marg, Near ATI, Sion Chunabhatti, Mum bai - 400022, Maharashtra, India
- (c) Sunman Engineering Inc.
C - 3163, 2nd Floor, Greenfield Colony, Shopping Complex, Faridabad - 121 003, Haryana, India