PROJECT REPORT

Of

rPET BOTTLE RECYCLING

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Plastic recycling unit(rPET Bottle Unit)

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

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‘Plastic Recycling Unit(rPET Bottle)’

Executive Summary

PET-bottles more and more replace glass bottles in the beverage and food sector. The success of PET in comparison to glass is based on several economic (and environmental) advantages. On the one hand, the production of PET is less expensive and energy consuming than the production of glass. Secondly, the light weight of the PET-bottle makes it easier for merchants and consumers to handle the bottles and crates. It saves energy during transport, particularly on long distance haulage. Finally, PET offers more or less the same material properties as glass regarding hygiene, taste and gas impermeability. The consumption of bottled water has been increased very much in the past few years. Plastics are significant and make a positive contribution with regards to packaging in various ways. By sorting and processing plastic packaging that is found in predominantly homogeneous streams, the value and market availability is maximized for the collected plastic packaging industry. Plastic bottles, plastic tubs, and plastic bags all have the potential to be recycled. One of the fastest growing types of collected plastic materials for recycling is polyethylene terephthalate ("PET") from post-consumer beverage and water bottles. For beverages and other juices, plastic bottles

are used more preferably. The growing utilization of plastics in industrial and consumer applications, combined with increased consumer awareness surrounding solid waste recycling, has led to an increased demand for recycled plastic resins and products. One of the fastest growing types of collected plastic materials for recycling is polyethylene terephthalate ("PET") from post-consumer beverage and water bottles. Replay Plastics will capitalize on the opportunities in the recycled resin.

Project Profile

Poly-Ethylene Terephthalate (PET) is one of the most widely used plastics today. PET bottles are ubiquitous in our day-to-day lives–one has to just look around to spot a PET bottle containing mineral water or soft drink or used for other applications. PET bottles, post use, still carry a lot of value, and recycled PET (r-PET) can be used in a wide variety of applications. This makes post-consumer PET bottles a very sought after item by waste collectors. Discarded PET bottles fetch waste collectors Rs. 14-15/kg. These bottles are bought by kabadiwallahs or waste traders, who employ people to segregate, sort and further sell it to large vendors or recyclers. The caps, neck rings, labels (non-PET components) are removed, and the bottles are shredded, washed, and sold as what is called ‘washed flakes’. These washed flakes are then used to make (predominantly) polyester fiber, which is used as filling material for cushions, pillows, and converted to fabrics for use in clothing, upholstery, etc. These end products sell at anywhere between Rs. 50-110/kg; the market for r-PET products is quite large. There are 40+ large manufacturers across India who uses r-PET as raw material. The PET recycling business can be estimated (roughly) to be around Rs. 3,000- 4,000 crore in a given year in India.

Project Brief

This document provides details for setting up discarded pet bottle recycling plant . The unit will have the capacity to produce approximately of 1600 kg plastic chips (granules) per day on single shift basis.

Proposed Business Legal Status

The business legal status of the proposed project can either be sole proprietorship or partnership. Additionally, it can also be registered under the Companies Act, 2013 The selection depends upon the choice of the Entrepreneur. This Pre-feasibility assumes the legal status to be Sole Proprietorship.

Proposed Capacity

The proposed project is capable to produce an average of 1600 kg plastic chips (granules) per day. Considering the market demand and population growth trends,

initially the project would easily be able to produce and sell the quantity, which is required for the project to be economically viable.

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Proposed Location

Most of the plastic recycling units can be established in or near major cities where source of Raw material is available in abundance.

Key Success Factors

The key to success of this project is in manufacturing good quality plastic chips . Quality standards should be followed strictly.Strong presence in the domestic market. Traders/Wholesalers are already present in the local Market. Tools & equipments locally available at low price. Raw materials are available in sufficient quantity and consumers of the plastic chips are available. (As per Annexure)

Market Potential

Polyethylene terephthalate or PET (also known as PETE) is one of the most common types of plastic. Most single-serve plastic bottles, including those for water, soft drinks and juices, are made with PET.PET recycling is the process of reprocessing plastic that already has been used before and giving it some new reusable form. For instance, this could mean melting down soft drink bottles and then casting them as plastic chairs and tables.

Recycling of PET bottles has grown to become an Rs 3,500-crore industry and nearly 70 per cent of PET waste is reprocessed in the country and growing at an annual growth rate of 29.9%.Nearly 70% of polyethylene terephthalate bottles are recycled in India, and the market is worth an estimated to be Rs. 3,000- 4,000 crore per year. India is expected to grow at a CAGR of 10.19% during the period 2018-2022. Entrepreneurs who invest in this project will be successful.

Potential Risks

Unavailable or scarce raw material feed stock for production • Replay is confident that it has secured good availability of low cost post-consumer PET bottles (feed stock) derived from post-consumer beverage bottles from California based recycling collectors, and has back up sources identified.

The Company may not be able to sell all of its production capability • Through the Senior Management's industry-wide contacts, the Company has identified potential customers and received commitments for all of the production potential of the initial facility.

The Company currently has commitments from customers to purchase all of the initial

production capacity. Excess flake will be sold to outside customers.
Freight is a major cost of operations; proximity to source of supply and markets is crucial. Hauling plastic materials is expensive so entrants will have to consider establishing facilities close to materials and markets. Entrants with existing operations would have to consider new separate facilities in many cases, reducing economies of scale and making management more difficult.
These industry-wide relationships will also provide the Company the ability to secure contracts for the supply of its raw material at competitive pricing.

Value Chain of PET Recycling

There are a large number of people involved in the PET recycling business, starting from the waste collectors and kabadiwallahs to the small and medium traders, recyclers, and manufacturers who use recycled PET for various products. The chart above provides a simplistic illustration of the participants in the PET recycling business in India.

Step 1: Reaching the waste stream, getting collected.

There are various ways in which PET bottles reach the waste stream for recycling. Municipal solid waste (MSW) is one main source. All plastic items are separated from MSW and sold to a kabadiwallah who specializes in plastic waste. Waste collectors also go directly to the sources (railway stations, airports, restaurants, hotels, and kiosks) to

collect. As long as PET bottles are segregated (along with the dry waste) and discarded, there is a high likelihood that they will be picked up and recycled. There are some aspects that set PET bottles apart vis-à- vis other plastic waste. First, PET bottles are easily distinguishable, hence easy to pick up, sort, store etc. And weight per bottle (empty) is reasonably high for the waste collectors to invest their resources to collect them (as compared to extremely low weight, small size waste, like chocolate wrappers). There are 40+ large scale manufacturing units all over India that use recycled PET (washed flakes) as raw material. Hence there is a healthy demand for recycled PET. A kilogram of post-consumer PET bottles fetch the waste collectors Rs 14- 15/kg (prices vary from time to time; this price point was recorded when interviews were conducted between May-Aug 2016).

Step 2: Sorting at the Kabadiwallahs.

The kabadiwallahs get mixed-plastic waste. They run sorting operations, where people sort the waste into polyethylene (PE), polypropylene (PP), milky PP, HDPE, LDPE, PET\

etc. This is done mostly by visual inspection, by subjecting the plastic item to a series of improvised tests like touch, bending, snapping, applying solvents etc. The different plastics are segregated and sold to different traders. The kabadiwallahs get Rs 24-25/kg of PET bottles.

Step 3: Removing non-PET components, sorting, baling at the traders.

Traders receive anywhere between a few hundred kgs. to a few tons of PET bottles a day. Each and every PET bottle is scrutinized rigorously, through manual inspection. First, all coloured PET bottles (green, amber) are segregated and sold separately. Metal caps, rings (a feature common in PET bottles used for packaging liquor etc.) are removed by hand. There are many kinds of labels applied on PET bottles—PP, PVC etc. PVC labels pose a particular problem, as they could seriously jeopardize the fiber manufacturing process. [PVC and PET have a similar density, hence it is difficult to

separate by flotation; but PVC and PET have different Internal Viscosities, which makes it very difficult to process PET contaminated with PVC.] Hence all PVC labels (identified by sight) are removed. Bottles made from other plastics are removed. Once all this is done, the bottles are baled—i.e., crushed to make compact bundles, each weighing 120-140 kgs. Baling makes it possible to transport PET bottles efficiently—by making it possible to transport 8-9 tons in a full-scale truck.

Each baling machine can bale around 0.7-1 ton of PET bottles in a day. It takes approximately ten workers (sorters, packers, balers) to produce a ton of baled PET bottles in a day.

The traders procure at Rs. 24-25 per kg. And they incur around 4 Rs. per kg as costs in sorting and baling (costs include labour, electricity, packing costs, rent, and 'shortage'. Many PET bottles when they arrive at the trader may contain non-trivial amounts of residual liquids (water, juices, other beverages, liquids stored in the bottle). Some of these liquids are emptied during the sorting process. Some of the liquids are crushed out during the baling process—all of which causes a loss in weight of the PET bottles-shortage is the term used to denote this loss. The traders sell to the recyclers at Rs. 30-31 per kg (for white PET bottles; green bottles yield a slightly lower rate; amber PET bottles yield even lower).

Step 4: At the PET recyclers—sorting (once again), cleaning, flaking.

Trucks carrying bales of PET bottles arrive at the recyclers. The bales are opened and the sorting, cleaning process starts all over again. The bottles are put through various stages of manual, semi-automatic and automatic sorting, cleaning processes. All PVC labels, bottles are removed. Any metal component that might have slipped in (like caps, rings, springs used in spray bottles etc.) are diligently removed. The bottles are

shredded, and the plastic (non- PVC plastics like PE, PP) components are separated by flotation. The flakes are subjected to further washing, drying and are ready (washed flakes) to be shipped to the manufacturing units.

Step 5: At the manufacturers – turned into polyester fibers

The washed flakes are melted and spun into fibers of various grades, and used to make PET sheets, monofilament, strap etc.

Manufacturing Process: -

Recycling of plastic scrap involves basically grinding, washing, and drying activity. A semi-automated plant will be installed for the same. Initially this unit will purchase plastic scraps of different types and then the sorting process starts where the plastics are sorted manually according to the description i.e. PET, HDPE, LDPE, PP, etc
Most plastic products come with a code on the bottom, this code determines if and how this product can be recycled. Before being recycled the plastic is sorted by a Plastic Identification Code and number; there are 7 classifications for plastic. For the purpose of our project only PET (Arrowed 1)is considered.

LDPETE: Polyethylene terephthalate ethylene, used for soft drink, juice, water, detergent, cleaner and peanut butter containers.

HDLDPE: High-density polyethylene, used in opaque plastic milk and water jugs, bleach, detergent and shampoo bottles and some plastic bags.

PVC or V: Polyvinyl chloride, used for cling wrap, some plastic squeeze bottles, cooking oil and peanut butter jars, detergent and window cleaner bottles.

LDLDPE: Low density polyethylene, used in grocery store bags, most plastic wraps and some bottles.

PP: Polypropylene, used in most deli soup, syrup and yogurt containers, straws and other clouded plastic containers, including baby bottles.

PS: Polystyrene, used in Styrofoam food trays, egg cartons, disposable cups and bowls, carryout containers and opaque plastic cutlery.

Other: Usually polycarbonate, used in most plastic baby bottles, 5-gallon water bottles, "sport" water bottles, metal food can liners, clear plastic "sippy" cups and some clear plastic cutlery.
New bio-based plastics may also be labeled #7.

Thereafter grinding process starts where different types of sorted plastic scraps are grinded into small granules/ chips. Then the washing process starts where plastic granules are washed completely to remove dirt and at last it is dried. Then the plastic granules/chips are packed in gunny bags of 100 kg approx and are ready for dispatch.

The total process can be described in the flow chart as below:-

Flow Chart

Plastic Collection

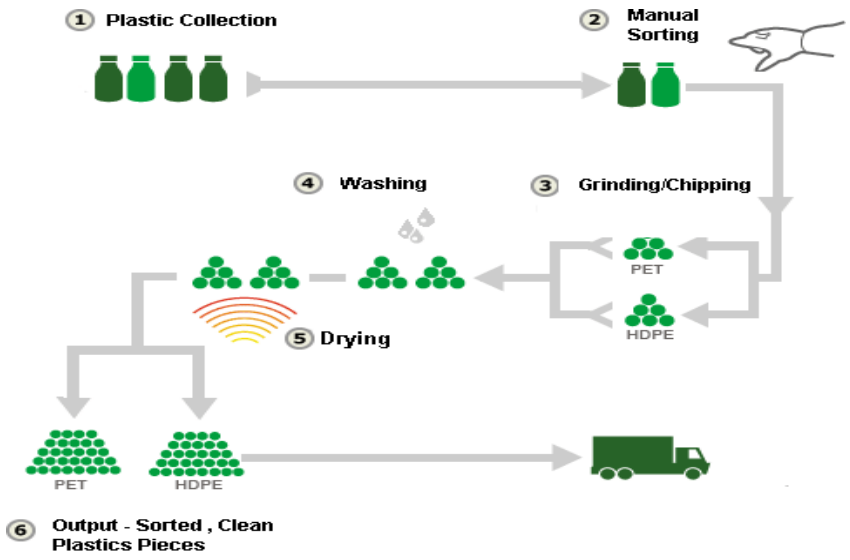
Manual Sorting

Grinding/Chipping

Washing

Drying

Sorted, clean plastic Granules



DIAGRAMATIC PRESENTATION OF RECYCLING PROCESS

PROJECT AT A GLANCE

1	Name of the Entreprenuer		XXXXXXX		
2	Constitution (legal Status)	:	XXXXXXX		
3	Father's/Spouce's Name		XXXXXXXX		
4	Unit Address	:	XXXXXXXX		
			Taluk/Block:		
			District :		XXXXX
			State:		XXXXX
			Pin:		XXXXX
			E-Mail :		XXXXX
			Mobile		XXXXX
5	Product and By Product	:	Plastic Granules		
6	Name of the project / business activity proposed :		Plastic (rPET) Recycling Unit		
7	Cost of Project	:	Rs. 36.61 Lacs		
8	Means of Finance				
	Term Loan		Rs. 22.95 Lacs		
	KVIC Margin Money		As per Project Eligibility		
	Own Capital		Rs. 3.36 Lacs		
9	Debt Service Coverage Ratio	:		2.90	
10	Pay Back Period	:	5 Years		Years
11	Project Implementation Period	:	3 Months		Months
12	Break Even Point	:		26%	
13	Employment	:		9	
14	Power Requirement	:		75	hp
15	Major Raw materials	:	Waste Plastic Bottles		
16	Estimated Annual Sales Turnover	:	Rs. 109.44 Lacs		
17	Detailed Cost of Project & Means of Finance				

COST OF PROJECT

MEANS OF FINANCE

(Rs. In Lacs)

Particulars	Amount	Particulars	Amount
Land	Rented/Owned	Own Contribution 10%	3.66
Building & Civil Work	3.00	Term Loan	22.95
Plant & Machinery	20.00	Working capital	10.00
Furniture & Fixtures	1.50		
Other Equipments	1.00		
Working Capital	11.11		
Total	36.61	Total	36.61

18 PLANT & MACHINERY

PARTICULARS	QTY.	RATE	AMOUNT IN RS.
Bale Opener			
Rotary Trommel			
Shorting Belt w/Metal Detector			
Wet Granulator/Crusher			
Label Remover			
Sink-Float Seperation tank			
Hot Steam Washer			
Friction Washer			
De-watering/Centrifugal Dryer			
Hot Air(Thermal) spiral pipe dryer			
Water filtration/Recycling system			
TOTAL			2,000,000.00

PROJECTED BALANCE SHEET

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
SOURCES OF FUND					
Capital Account	3.66	3.66	3.66	3.66	3.66
Retained Profit	4.44	10.39	21.52	39.42	64.11
Term Loan	20.41	15.33	10.25	5.17	-
Cash Credit	10.00	10.00	10.00	10.00	10.00
Sundry Creditors	3.93	6.09	7.83	9.85	12.20
Provisions & Other Liab	0.50	0.60	0.66	0.73	0.80
TOTAL :	**42.94**	**46.07**	**53.92**	**68.83**	**90.77**
APPLICATION OF FUND					
Fixed Assets (Gross)	25.50	25.50	25.50	25.50	25.50
Gross Dep.	3.53	6.62	9.26	11.53	13.48
Net Fixed Assets	21.98	18.89	16.24	13.97	12.02
Current Assets					
Sundry Debtors	10.21	12.06	16.15	20.32	25.16
Stock in Hand	8.68	11.45	14.70	18.48	22.86
Cash and Bank	0.08	1.47	4.42	13.40	27.80
Other Current Assets	2.00	2.20	2.42	2.66	2.93
TOTAL :	**42.94**	**46.07**	**53.92**	**68.83**	**90.77**
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
A) SALES					
Gross Sale	109.44	150.80	193.75	243.80	301.91
Total (A)	**109.44**	**150.80**	**193.75**	**243.80**	**301.91**
B) COST OF SALES					
Raw Material Consumed	73.72	101.58	130.52	164.22	203.37
Elecricity Expenses	7.39	8.86	10.34	11.82	13.29
Repair & Maintenance	2.19	3.02	3.88	4.88	6.04
Labour & Wages	5.76	6.34	6.97	7.67	8.43
Depriciation	3.53	3.09	2.65	2.27	1.95
Other Direct Expenses	1.97	2.71	3.49	4.39	5.43
Cost of Production	94.55	125.60	157.83	195.24	238.51
Add: Opening Stock /WIP	-	5.18	6.84	8.78	11.04
Less: Closing Stock /WIP	5.18	6.84	8.78	11.04	13.66
Cost of Sales (B)	89.37	123.94	155.90	192.98	235.89
C) GROSS PROFIT (A-B)	20.07	26.86	37.86	50.81	66.02
	18%	**18%**	**20%**	**21%**	**22%**
D) Bank Interest (Term Loan)	1.86	2.04	1.48	0.92	0.36
Bank Interest (C.C. Limit)	1.10	1.10	1.10	1.10	1.10
E) Salary to Staff	4.08	4.49	4.94	5.43	5.97
F) Selling & Adm Expenses Exp.	7.11	11.31	15.50	19.50	25.66
TOTAL (D+E)	**14.15**	**18.93**	**23.01**	**26.95**	**33.10**
H) NET PROFIT	5.92	7.93	14.85	23.86	32.92
I) Taxation	1.48	1.98	3.71	5.97	8.23
J) PROFIT (After Tax)	4.44	5.94	11.13	17.90	24.69
K) DEPRECIATION	3.53	3.09	2.65	2.27	1.95
L) CASH ACCRUAL	7.97	9.03	13.78	20.17	26.64

PROJECTED CASH FLOW STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
SOURCES OF FUND					
Share Capital	3.66	-			
Reserve & Surplus	5.92	7.93	14.85	23.86	32.92
Depriciation & Exp. W/off	3.53	3.09	2.65	2.27	1.95
Increase in Cash Credit	10.00	-	-	-	-
Increase In Term Loan	22.95	-	-	-	-
Increase in Creditors	3.93	2.16	1.74	2.02	2.35
Increase in Provisions	0.50	0.10	0.06	0.07	0.07
TOTAL :	**50.49**	**13.28**	**19.29**	**28.22**	**37.29**
APPLICATION OF FUND					
Increase in Fixed Assets	25.50	-	-	-	-
Increase in Stock	8.68	2.78	3.24	3.78	4.39
Increase in Debtors	10.21	1.85	4.08	4.17	4.84
Increase in Other Current Assets	2.00	0.20	0.22	0.24	0.27
Repayment of Term Loan	2.54	5.08	5.08	5.08	5.17
Taxation	1.48	1.98	3.71	5.97	8.23
TOTAL :	**50.41**	**11.89**	**16.34**	**19.24**	**22.90**
Opening Cash & Bank Balance	-	0.08	1.47	4.42	13.40
Add : Surplus	0.08	1.39	2.95	8.98	14.39
Closing Cash & Bank Balance	**0.08**	**1.47**	**4.42**	**13.40**	**27.80**

COMPUTATION OF PRODUCTION AND SALES

CALCULATION OF PRODUCTION

Manufacturing Capacity	200	Kg Per hour
No. of Working Hour	8	
No of Working Days per month	25	
No. of Working Day per annum	300	
Total Production per Annum	480	Tons per Annum

Year	Capacity Utilization(Production)		Capacity Utilization(Raw Material)	
IST YEAR	50%	240	50%	243
IIND YEAR	60%	288	60%	291
IIIRD YEAR	70%	336	70%	340
IVTH YEAR	80%	384	80%	388
VTH YEAR	90%	432	90%	437

COMPUTATION OF SALE

Particulars	**IST YEAR**	**IIND YEAR**	**IIIRD YEAR**	**IVTH YEAR**	**VTH YEAR**
Op Stock	-	12	14	17	19
Production	240	288	336	384	432
	240	300	350	401	451
Less : Closing Stock	12	14	17	19	22
Net Sale	228	286	334	382	430
Sale Price Per ton	48,000.00	52,800.00	58,080.00	63,888.00	70,277.00
Sale (in Lacs)	**109.44**	**150.80**	**193.75**	**243.80**	**301.91**

COMPUTATION OF RAW MATERIAL

Particulars	**IST YEAR**	**IIND YEAR**	**IIIRD YEAR**	**IVTH YEAR**	**VTH YEAR**
Op Stock	-	12	15	17	19
Raw Material Required	243	291	340	388	437
	243	303	354	405	456
Less : Closing Stock	12	15	17	19	22
Net Sale	230	289	337	386	434
Sale Price Per ton	32,000.00	35,200.00	38,720.00	42,592.00	46,851.00
Sale (in Lacs)	**73.72**	**101.58**	**130.52**	**164.22**	**203.37**

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR	
Finished Goods						
(15 Days requirement)	5.18	6.84	8.78	11.04	13.66	
Raw Material						
(15 Days requirement)	3.49	4.61	5.92	7.44	9.20	
Closing Stock	**8.68**	**11.45**	**14.70**	**18.48**	**22.86**	

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars	Total		Own		Bank
	Amount		Margin		Finance
Stock in Hand	8.68	25%	2.17	75%	6.51
Sundry Debtors	10.21	25%	2.56	75%	7.65
	18.89		4.73		14.16
Sundry Creditors	3.93		-		3.93
	14.96		**4.73**		**10.23**
WORKING CAPITAL (HYP) FRESH DEMAND			**10.00**		

BREAK UP OF LABOUR

Particulars		Wages Per Month	No of Employees	Total Salary
Skilled Worker		8,000.00	3	24,000.00
Unskilled Worker		6,000.00	4	24,000.00
				48,000.00

5.76

BREAK UP OF SALARY

Particulars		Salary Per Month	No of Employees	Total Salary
Manager		20,000.00	1	20,000.00
Accountant		14,000.00	1	14,000.00
Total Salary Per Month				34,000.00

4.08

COMPUTATION OF DEPRECIATION

Description	Land	Building & Civil Work	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation		**10.00%**	**15.00%**	**10.00%**	
Opening Balance	Leased	-	-	-	-
Addition	-	3.00	21.00	1.50	25.50
	-	3.00	21.00	1.50	25.50
Less : Depreciation	-	0.30	3.15	0.08	3.53
WDV at end of Ist year	-	2.70	17.85	1.43	21.98
Additions During The Year	-	-	-	-	-
	-	2.70	17.85	1.43	21.98
Less : Depreciation	-	0.27	2.68	0.14	3.09
WDV at end of IInd Year	-	2.43	15.17	1.28	18.89
Additions During The Year	-	-	-	-	-
	-	2.43	15.17	1.28	18.89
Less : Depreciation	-	0.24	2.28	0.13	2.65
WDV at end of IIIrd year	-	2.19	12.90	1.15	16.24
Additions During The Year	-	-	-	-	-
	-	2.19	12.90	1.15	16.24
Less : Depreciation	-	0.22	1.93	0.12	2.27
WDV at end of IV year	-	1.97	10.96	1.04	13.97
Additions During The Year	-	-	-	-	-
	-	1.97	10.96	1.04	13.97
Less : Depreciation	-	0.20	1.64	0.10	1.95
WDV at end of Vth year	-	1.77	9.32	0.93	12.02

REPAYMENT SCHEDULE OF TERM LOAN

11%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	Cl Balance
IST YEAR	Opening Balance						
	Ist Quarter	-	22.95	22.95	-	-	22.95
	Iind Quarter	22.95	-	22.95	0.63	-	22.95
	IIIrd Quarter	22.95	-	22.95	0.63	1.27	21.68
	Ivth Quarter	21.68	-	21.68	0.60	1.27	20.41
					1.86	2.54	
IIND YEAR	Opening Balance						
	Ist Quarter	20.41	-	20.41	0.56	1.27	19.14
	Iind Quarter	19.14	-	19.14	0.53	1.27	17.87
	IIIrd Quarter	17.87	-	17.87	0.49	1.27	16.60
	Ivth Quarter	16.60		16.60	0.46	1.27	15.33
					2.04	5.08	
IIIRD YEAR	Opening Balance						
	Ist Quarter	15.33	-	15.33	0.42	1.27	14.06
	Iind Quarter	14.06	-	14.06	0.39	1.27	12.79
	IIIrd Quarter	12.79	-	12.79	0.35	1.27	11.52
	Ivth Quarter	11.52		11.52	0.32	1.27	10.25
					1.48	5.08	
IVTH YEAR	Opening Balance						
	Ist Quarter	10.25	-	10.25	0.28	1.27	8.98
	Iind Quarter	8.98	-	8.98	0.25	1.27	7.71
	IIIrd Quarter	7.71	-	7.71	0.21	1.27	6.44
	Ivth Quarter	6.44		6.44	0.18	1.27	5.17
					0.92	5.08	
VTH YEAR	Opening Balance						
	Ist Quarter	5.17	-	5.17	0.14	1.27	3.90
	Iind Quarter	3.90	-	3.90	0.11	1.27	2.63
	IIIrd Quarter	2.63	-	2.63	0.07	1.27	1.36
	Ivth Quarter	1.36		1.36	0.04	1.36	0.00
					0.36	5.17	

COMPUTATION OF ELECTRICITY

(A) POWER CONNECTION				
Total Working Hour per day			10	hrs
Electric Load Required			75	hp
Load Factor			0.746	
Total Working Days			300	
Total Load required			167850	kw
Electricity Charges			8	Rs/unit
Electricity Charges (10 Hrs Per day)				
			1,342,800.00	
Add : Minimim Charges (@ 10%)			134,280.00	
			1,477,080.00	
			14.77	Rs. In Lacs
Year		**Capacity**		**Amount**
				(in Lacs)
IST YEAR		50%		7.39
IIND YEAR		60%		8.86
IIIRD YEAR		70%		10.34
IVTH YEAR		80%		11.82
VTH YEAR		90%		13.29

CALCULATION OF D.S.C.R

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
CASH ACCRUALS	7.97	9.03	13.78	20.17	26.64
Interest on Term Loan	1.86	2.04	1.48	0.92	0.36
Total	9.83	11.07	15.26	21.08	27.00
REPAYMENT					
Instalment of Term Loan	2.54	5.08	5.08	5.08	5.17
Interest on Term Loan	1.86	2.04	1.48	0.92	0.36
Total	4.40	7.12	6.56	6.00	5.53
DEBT SERVICE COVERAGE RATIO	**2.23**	**1.56**	**2.33**	**3.52**	**4.88**
AVERAGE D.S.C.R.			**2.90**		

BREAK EVEN POINT ANALYSIS

Year	I	II	III	IV	V
Net Sales & Other Income	109.44	150.80	193.75	243.80	301.91
Less : Op. WIP Goods	-	5.18	6.84	8.78	11.04
Add : Cl. WIP Goods	5.18	6.84	8.78	11.04	13.66
Total Sales	**114.62**	**152.46**	**195.69**	**246.05**	**304.53**
Variable & Semi Variable Exp.					
Raw Material & Tax	73.72	101.58	130.52	164.22	203.37
Electricity Exp/Coal Consumption at 85%	6.28	7.53	8.79	10.04	11.30
Manufacturing Expenses 80%	1.58	2.17	2.79	3.51	4.35
Wages & Salary at 60%	3.46	3.80	4.18	4.60	5.06
Selling & adminstrative Expenses 80%	7.44	11.46	15.50	19.50	25.36
Intt. On Working Capital Loan	1.10	1.10	1.10	1.10	1.10
Total Variable & Semi Variable Exp	**93.57**	**127.65**	**162.88**	**202.98**	**250.54**
Contribution	**21.05**	**24.81**	**32.82**	**43.07**	**54.00**
Fixed & Semi Fixed Expenses					
Manufacturing Expenses 20%	0.39	0.54	0.70	0.88	1.09
Electricity Exp/Coal Consumption at 15%	1.11	1.33	1.55	1.77	1.99
Wages & Salary at 40%	2.30	2.53	2.79	3.07	3.37
Interest on Term Loan	1.86	2.04	1.48	0.92	0.36
Depreciation	3.53	3.09	2.65	2.27	1.95
Selling & adminstrative Expenses 20%	1.86	2.87	3.88	4.88	6.34
Total Fixed Expenses	**11.05**	**12.40**	**13.04**	**13.78**	**15.10**
Capacity Utilization	**50%**	**60%**	**70%**	**80%**	**90%**
OPERATING PROFIT	**10.00**	**12.41**	**19.78**	**29.29**	**38.90**
BREAK EVEN POINT	**26%**	**30%**	**28%**	**26%**	**25%**
BREAK EVEN SALES	**60.16**	**76.18**	**77.73**	**78.72**	**85.15**

SAMADHAN
Nurturing Dreams - Innovative Solutions

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