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# Pre-Feasibility Study

## DIAPERS MANUFACTURING PLANT



**Small and Medium Enterprises Development Authority**

**Ministry of Industries & Production**

**Government of Pakistan**

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## 1 DISCLAIMER

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### Document Control

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## **2 EXECUTIVE SUMMARY**

Disposable diapers are a great convenience in the modern world. A disposable diaper consists of an absorbent pad sandwiched between two sheets of nonwoven fabric. The pad is specially designed to absorb and retain body fluids and the nonwoven fabric gives the diaper a comfortable shape and helps in preventing leakage. The diaper market in Pakistan is growing at a steady rate during the last decade.

This particular pre-feasibility study is for setting up a 'Diapers Manufacturing Unit' in any major industrial city of Pakistan. The proposed unit will be equipped with latest diapers manufacturing line to produce high quality disposable diapers that will be sold to wholesalers and retailers. Target end-users will be children from the age of infants to four year olds.

The proposed unit can produce 26.40 million diapers in the sizes of 0 to 4 per annum based on 300 working days on 8 hours single shift bases. However, starting operational capacity is assumed at 65% with an annual increase of 5%, it will attain a maximum capacity utilization of 90% in 6<sup>th</sup> year of operation. This production capacity is estimated to be economically viable and justifies the capital as well as operational cost of the project. Entrepreneur's knowledge of the diapers industry, competitive pricing, and strong linkage with wholesalers and retailers are key factors for the success of this business.

Total project cost is estimated as Rs. 116.592 million with capital investment of Rs. 108.232 million and working capital of Rs. 8.360 million. Based on an equity finance model, the project NPV is around Rs. 25.248 million, with an IRR of 22% and Payback Period of 5.31 years. The project will provide employment opportunities to 22 people including the Owner. The legal business status of this project is assumed to be 'Sole Proprietorship'.

## **3 INTRODUCTION TO SMEDA**

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need based capacity building programs of different types in addition to business guidance through help desk services.

#### **4 PURPOSE OF THE DOCUMENT**

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document/study covers various aspects of project concept development, start-up, and production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **Diapers Manufacturing Unit** by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and its successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later, which form basis of any Investment Decision.

#### **5 BRIEF DESCRIPTION OF PROJECT & PRODUCT**

Diapers are primarily worn by infants, toddlers who are not yet toilet trained, and by children who experience bedwetting. Diapers are made from common materials that have a long history of safe use in a variety of everyday consumer products. An average diaper weighs between 1.4 and 1.8 ounces and is primarily made of cellulose, polypropylene, polyethylene and sodium polyacrylate a super absorbent polymer along with minor amounts of tapes, elastics and adhesive materials. Advances in each of these materials have enabled diapers to be lighter, thinner, more effective and environment friendly. The diaper pad is specially designed to absorb and retain body fluids while the nonwoven fabric gives the diaper a comfortable shape and helps prevent leakage.

The proposed diaper manufacturing unit will be equipped with latest Diapers Manufacturing Line along with Pneumatic Packager, Sealer and Air Compressors. The installed manufacturing line is capable of producing baby diapers in various sizes as per the requirements of customers. However, for this study a product mix of diapers

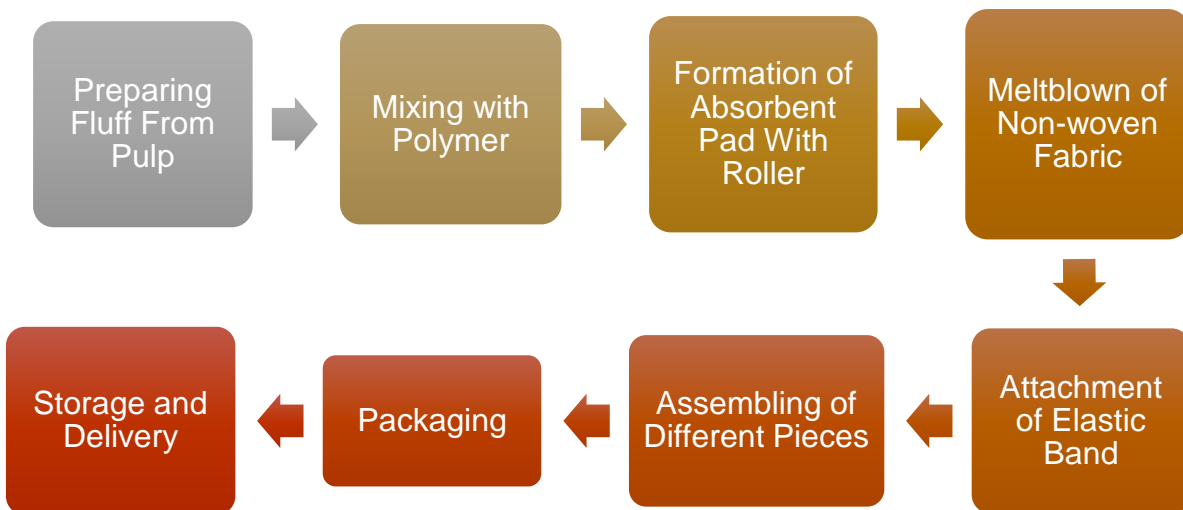
ranging from size 0 to 4 is assumed. The will be packaged for distribution in packs of 12, 32 and 64 diapers for each size.

The major raw materials include wood pulp fluff for absorbent core and sodium polyacrylate as super absorbent polymer, which along with other raw materials will be procured from the local market. The main target customers will be middle income group. The product will be made available at departmental and superstores by direct selling whereas small retailers will be targeted through wholesalers. The ideal location for the proposed project is any major industrial city across Pakistan. Financial analysis shows the unit shall be profitable from the very first year of operation. The legal business status of this project is assumed to be 'Sole Proprietorship.

### 5.1 Production Process Flow

The diapers are made through a multi-step process in which the absorbent pad is first vacuum-formed, then attached to a permeable top sheet and impermeable bottom sheet. The components are sealed together by application of heat. Afterwards, elastic fibres are attached to the sheets to gather the edges of the diaper into the proper shape and it fits snugly around baby legs and crotch. The process flow diagram of the diaper manufacturing is provided below:

**Figure 1: Production Process Flow**



### 5.2 Proposed Product Mix

The product mix would include diapers of sizes ranging from 0 to 4, packs of 12, 24 and 64 diapers each. Detailed production mix is given in the table below:

**Table 1: Product Mix**

Sizes of Diaper	Product Description for Baby Weight (lbs.)	Production Percentage	Packs of 12 Diapers	Packs of 24 Diapers	Packs of 64 Diapers
Size 0	< 10	20%	154,000	77,000	24,750
Size 1	11-18	20%	154,000	77,000	24,750
Size 2	19-26	20%	154,000	77,000	24,750
Size 3	27-37	20%	154,000	77,000	24,750
Size 4	> 37	20%	154,000	77,000	24,750
<b>Total Packs</b>			<b>770,000</b>	<b>385,000</b>	<b>123,750</b>
<b>Total Diapers</b>			<b>9,240,000</b>	<b>9,240,000</b>	<b>7,920,000</b>

### 5.3 Installed and Operational Capacity

Based on the machine capacity the total installed capacity of the project would be 26,400,000 diapers in a year with 300 working days on 8 hours single shift bases per day. The initial operational capacity of the project will be 65% with an annual growth of 5%. Maximum capacity utilization of the project is assumed at 90% which will be achieved in the 6th year of operations.

**Table 2: Installed and Operational Capacity (No of Diapers)**

Description	Total Installed Capacity	Operational Capacity 65 % (Year 1)	Maximum Capacity 90% (Year 6)
Size 0	5,280,000	3,432,000	4,752,000
Size 1	5,280,000	3,432,000	4,752,000
Size 2	5,280,000	3,432,000	4,752,000
Size 3	5,280,000	3,432,000	4,752,000
Size 4	5,280,000	3,432,000	4,752,000
<b>Total</b>	<b>26,400,000</b>	<b>17,160,000</b>	<b>23,760,000</b>

## 6 CRITICAL FACTORS

Following are the factors critical for the success of this business venture:

- ⇒ Background knowledge and related experience of the entrepreneur in Diapers Manufacturing Industry.
- ⇒ Selection of quality raw material on the basis of best analysis of cost and revenues for a given season; cost efficiency through better management.
- ⇒ Exceed customer expectations by offering high quality products at reasonable prices with quick turnaround times.
- ⇒ Business location is the key to success for the diapers manufacturing unit, in order to have greater reach to its customers to meet its revenue targets.
- ⇒ Stringent supervision of the production process at every level.
- ⇒ Induction of trained human resources for the handling of business operations especially in production and distribution
- ⇒ Strong linkages and networking with Departmental Stores, Retail Chains and Wholesalers for repeat order.
- ⇒ Appropriate arrangement for transportation of product.
- ⇒ Effective marketing and distribution of the product.
- ⇒ Employ careful financial and accounting analysis to ensure efficiency and proper controls.

## **7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT**

Location selection is critical to the success of the project. It is important to find a location preferably in an industrial cluster where utilities especially electricity and other infrastructure are conveniently available. Presently, Karachi, Lahore, Gujranwala, Faisalabad, Multan, Rawalpindi and Peshawar can be considered as these cities have adequate availability of skilled labor, raw material, and infrastructure. Additionally, majority of associated industries with baby diapers manufacturing are also located in these cities.

## **8 POTENTIAL TARGET CUSTOMERS / MARKETS**

Potential target customers for the produced disposable baby diapers will mainly comprise of parents with toddlers and babies. These potential customers would primarily be targeted through large superstores and wholesalers from the above identified metropolitan cities. The general household consumers will be targeted through retailers, while business buyers may also be accommodated through order manufacturing basis as well as through wholesalers.



## 9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Diapers Manufacturing Unit. Various cost and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are attached as annexures.

### 9.1 Project Economics

All the figures in this financial model have been calculated for the estimated sales of Rs. 309.888 million in the year one. The capacity utilization during year one is worked out at 65%.

The following table shows the internal rate of return, payback period and net present value of the proposed venture.

**Table 3: Project Economics**

Description	Details
Internal Rate of Return (IRR)	22%
Payback Period (Yrs.)	5.31
Net Present Value (Rs.)	25,247,834

Calculation of break-even analysis is as follows:

**Table 4: Breakeven (100% Equity Based)**

Break-Even Analysis	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Break-Even Revenue	204,049,818	218,402,521	235,136,228	254,652,971	276,673,896	300,605,404	324,341,415	350,122,330	378,527,562	410,075,008
Break-Even Units	520,564	506,527	495,761	488,100	482,098	476,180	467,072	458,362	450,499	443,677
Margin of Safety	34%	41%	46%	50%	53%	56%	57%	58%	59%	59%

However, for the purposes of further explanation the Project Economics based on Debt:Equity (i.e. 50:50) Model has also been computed. Based on Debt:Equity model the Internal Rate of Return, Payback Period and Net Present Value of the proposed project are provide in the table below.

**Table 5: Project Economics Based on Debt (50%):Equity (50%)**

Description	Details
Internal Rate of Return (IRR)	20%
Payback Period (Yrs.)	5.55
Net Present Value (Rs.)	38,604,658

The financial assumptions for Debt:Equity are as follows:

**Table 6: Financial Assumptions for Debt:Equity Model**

Description	Details
Debt	50%
Equity	50%
Interest Rate on Debt	12%
Debt Tenure (Years)	5
Debt Payment / Year	2

The projected Income Statement, Cash Flow Statement and Balance Sheet attached as annexures are based on 100% Equity Based Business Model.

## 9.2 Project Cost

Following fixed and working capital requirements have been identified for operations of the proposed business.

**Table 7: Project Cost**

Description	Amount Rs.
<b>Capital Cost</b>	
Land	14,400,000
Building / Infrastructure	23,405,900
Machinery & Equipment	65,866,148
Furniture & Fixtures	1,064,600
Office Vehicles	1,156,240
Computer Equipment	683,000

Wapda Security	201,000
Pre-Operating Costs	1,455,000
<b>Total Capital Cost</b>	<b>108,231,888</b>
Equipment Spare Part Inventory	143,000
Raw Material Inventory	7,203,282
Cash	1,014,242
<b>Total Working Capital</b>	<b>8,360,524</b>
<b>Total Project Cost</b>	<b>116,592,412</b>

### 9.3 Land and Infrastructure Requirement

Approximately 2.4 Kanal of land would be required for the establishment of the proposed unit. It is recommended that required land should be procured in the industrial estates of any major city. The cost of land is estimated at the rate of Rs. 6 million per kanal.

The infrastructural requirements of the project mainly comprise the construction of a production hall, warehouses for storage of raw materials and finished goods, a packing hall, management office and open space etc. The cost of construction of building for the proposed unit is provided in the table below.

**Table 8: Infrastructure Requirement**

Description	Estimated Area (Sq. ft.)	Unit Cost (Rs.)	Total Cost (Rs.)
Production Hall	2,000	2,500	5,000,000
Warehouse for FG And RM	4,500	2,500	11,250,000
Bag Production Hall	600	2,500	1,500,000
Packing Hall	800	2,500	2,000,000
Management Office	676	2,500	1,690,000
Washroom	216	2,500	540,000
Electrical Room	80	2,500	200,000
Mess	250	2,500	625,000
Open Area	2,128	50	106,400
Boundary Wall With Gate			494,500

<b>Total Construction Cost</b>		<b>23,405,900</b>
Cost of Land		14,400,000
<b>Total Cost</b>		<b>37,805,900</b>

#### 9.4 Machinery & Equipment Requirement

Plant, machinery and equipment for the proposed project are stated below.

**Table 9: Machinery & Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Diapers Manufacturing Machine	1	55,368,996	55,368,996
Packing Bag making Machine	1	2,228,693	2,228,693
Packing Machine	1	1,014,009	1,014,009
Installation Cost			2,768,450
Boarding Lodging And Other Costs of Supervisor From Plant Supplier			960,000
Generator	1	2,450,000	2,450,000
Transformer	1	946,000	946,000
Equipment for Electrical Room	1	45,000	45,000
Security Equipment	1	85,000	85,000
<b>Total</b>			<b>65,866,148</b>

#### 9.5 Furniture & Fixtures Requirement

Details of the furniture and fixture required for the project are given below.

**Table 10: Furniture & Fixture**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Table & Chairs	10	30,500	305,000
Visitor Chairs	14	8,000	112,000
Sofas	4	12,000	48,000
Cupboard	3	15,000	45,000
Miscellaneous Furniture	1	300,000	300,000

Ceiling Fans	7	3,800	26,600
Exhaust Fans	5	2,200	11,000
Led Bulbs (18 Watts)	22	1,000	22,000
Air Conditioners (1 Ton Split)	3	65,000	195,000
<b>Total</b>			<b>1,064,600</b>

## 9.6 Office Vehicles Requirement

Details of the office vehicles required for the project are given below.

**Table 11: Office Vehicles**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Pick up	1	1,076,240	1,076,240
Motor Bike 70 CC	1	80,000	80,000
<b>Total</b>			<b>1,156,240</b>

## 9.7 Office Equipment Requirement

Following office equipment will be required for the project are given below.

**Table 12: Office and Computer Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Computers	10	35,000	350,000
Computer printer (s)	2	23,000	46,000
Scanner	2	9,500	19,000
UPS with Batteries	1	50,000	50,000
Telephones	3	1,500	4,500
Fridge	1	51,500	51,500
Water Dispenser	3	19,000	57,000
Microwave Oven	1	13,500	13,500
Miscellaneous Kitchen Equipment and Utensils	1	50,000	50,000

LED for Office	1	41,500	41,500
<b>Total</b>			<b>683,000</b>

## 9.8 Human Resource Requirement

In order to run operations of Diapers Manufacturing Unit smoothly, details of human resources required along with number of employees and monthly salary are recommended as under.

**Table 13: Human Resource Requirement**

Description	No. of Employees	Monthly Salary per Person (Rs.)
Owner / Manager	1	100,000
Technical Supervisor	1	70,000
Chief Accountant	1	50,000
Accounts Executive	2	35,000
Marketing Manager	1	100,000
Sales Executive	4	35,000
Driver	1	25,000
Office Boys	1	17,500
Security Guards	2	25,000
Helpers	8	25,000
<b>Total</b>	<b>22</b>	

## 9.9 Utilities and Other Cost

An essential cost to be borne by the project is the cost of electricity. The electricity expenses are estimated to be around Rs. 518,690 per month (direct & indirect). Furthermore, promotional expense being essential for marketing of Diapers Manufacturing Unit is estimated as 2% of revenue.

## 9.10 Revenue Generation

Based on the capacity utilization of 65%, sales revenue during the first year of operations is provided in the table below.

**Table 14: Revenue Generation – Year 1**

Description	No. of Units Produced (No.)	Finished Goods Inventory (No.)	Units Available for Sale (No.)	Sale Price / Unit (Rs.)	Sales Revenue (Rs.)
<b>Small Pack (12 pieces)</b>					
Size 0	100,100	4,891	95,209	205	19,517,846
Size 1	100,100	4,891	95,209	225	21,422,026
Size 2	100,100	4,891	95,209	240	22,850,161
Size 3	100,100	4,891	95,209	250	23,802,251
Size 4	100,100	4,891	95,209	275	26,182,476
<b>Large Pack (24 pieces)</b>					
Size 0	50,050	2,445	47,605	380	18,089,711
Size 1	50,050	2,445	47,605	430	20,469,936
Size 2	50,050	2,445	47,605	455	21,660,048
Size 3	50,050	2,445	47,605	475	22,612,138
Size 4	50,050	2,445	47,605	525	24,992,363
<b>Economy Pack (64 pieces)</b>					
Size 0	16,088	786	15,301	960	14,689,389
Size 1	16,088	786	15,301	1,090	16,678,577
Size 2	16,088	786	15,301	1,155	17,673,171
Size 3	16,088	786	15,301	1,220	18,667,765
Size 4	16,088	786	15,301	1,345	20,580,446
<b>Total</b>					<b>309,888,302</b>

## 10 CONTACT DETAILS

In order to facilitate potential investors, contact details of private sector Service Providers relevant to the proposed project be given.

**Table 15: Machinery Suppliers**

Name of Supplier	Address	Phone / Email
RML Machinery & Services	SA –VIA Mercoli 8A – 6900 Lugano (Switzerland)	+41 91 9725 874 <a href="mailto:info@rmlservices.com">info@rmlservices.com</a>

## 11 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	<a href="http://www.smeda.org.pk">www.smeda.org.pk</a>
Government of Pakistan	<a href="http://www.pakistan.gov.pk">www.pakistan.gov.pk</a>
Ministry of Industries & Production	<a href="http://www.moip.gov.pk">www.moip.gov.pk</a>
Government of Punjab	<a href="http://www.punjab.gov.pk">www.punjab.gov.pk</a>
Government of Sindh	<a href="http://www.sindh.gov.pk">www.sindh.gov.pk</a>
Government of Khyber Pakhtunkhwa	<a href="http://www.khyberpakhtunkhwa.gov.pk">www.khyberpakhtunkhwa.gov.pk</a>
Government of Baluchistan	<a href="http://www.balochistan.gov.pk">www.balochistan.gov.pk</a>
Government of Gilgit Baltistan	<a href="http://www.gilgitbaltistan.gov.pk">www.gilgitbaltistan.gov.pk</a>
Government of Azad Jammu Kashmir	<a href="http://www.ajk.gov.pk">www.ajk.gov.pk</a>
Trade Development Authority of Pakistan (TDAP)	<a href="http://www.tdap.gov.pk">www.tdap.gov.pk</a>
Security Commission of Pakistan (SECP)	<a href="http://www.secp.gov.pk">www.secp.gov.pk</a>
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	<a href="http://www.fpcci.com.pk">www.fpcci.com.pk</a>
State Bank of Pakistan (SBP)	<a href="http://www.sbp.org.pk">www.sbp.org.pk</a>
Punjab Small Industries Corporation	<a href="http://www.psic.gop.pk">www.psic.gop.pk</a>
Sindh Small Industries Corporation	<a href="http://www.ssic.gos.pk">www.ssic.gos.pk</a>
Quaid-e-Azam Industrial Estate	<a href="http://www.qie.com.pk">www.qie.com.pk</a>
Punjab Vocational Training Council (PVTC)	<a href="http://www.pvtc.gop.pk">www.pvtc.gop.pk</a>
Punjab Industrial Estates (PIE)	<a href="http://www.pie.com.pk">www.pie.com.pk</a>
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	<a href="http://www.fiedmc.com.pk">www.fiedmc.com.pk</a>



## 12 ANNEXURES

### 12.1 Income Statement

Calculations										SMEDA
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	309,888,302	367,098,451	432,651,745	507,644,715	593,309,760	691,031,368	760,134,504	836,147,955	919,762,750	1,011,739,025
<i>Cost of sales</i>										
Raw Material Cost	259,318,164	307,192,287	362,048,052	424,803,048	496,488,562	578,263,149	636,089,464	699,698,410	769,668,251	846,635,076
Operation costs 1 (direct labor)	4,223,056.67	4,645,362	5,109,899	5,620,888	6,182,977	6,801,275	7,481,402	8,229,543	9,052,497	9,957,747
Operating costs 2 (machinery maintenance)	3,432,000	4,065,600	4,791,600	5,622,144	6,570,881	7,653,144	8,418,458	9,260,304	10,186,334	11,204,967
Operating costs 3 (direct electricity)	6,082,650	6,690,915	7,360,007	8,096,007	8,905,608	9,796,169	10,775,786	11,853,364	13,038,700	14,342,571
Total cost of sales	273,055,871	322,594,164	379,309,557	444,142,087	518,148,028	602,513,736	662,765,110	729,041,621	801,945,783	882,140,361
Gross Profit	36,832,432	44,504,287	53,342,188	63,502,627	75,161,732	88,517,632	97,369,395	107,106,334	117,816,968	129,598,664
<i>General administration &amp; selling expenses</i>										
Administration expense	5,430,000	5,973,000	6,570,300	7,227,330	7,950,063	8,745,069	9,619,576	10,581,534	11,639,687	12,803,656
Administration benefits expense	271,500	298,650	328,515	361,367	397,503	437,253	480,979	529,077	581,984	640,183
Electricity expense	141,624	155,787	171,366	188,502	207,352	228,088	250,896	275,986	303,585	333,943
Water expense	84,461	92,907	102,198	112,418	123,660	136,025	149,628	164,591	181,050	199,155
Travelling expense	1,086,000	1,194,600	1,314,060	1,445,466	1,590,013	1,749,014	1,923,915	2,116,307	2,327,937	2,560,731
Communications expense (phone, fax, mail, internet, etc.)	126,692	139,361	153,297	168,627	185,489	204,038	224,442	246,886	271,575	298,732
Office vehicles running expense	92,499	101,749	111,924	123,116	135,428	148,971	163,868	180,255	198,280	218,108
Office expenses (stationary, entertainment, janitorial services, etc.)	168,922	185,814	204,396	224,836	247,319	272,051	299,256	329,182	362,100	398,310
Promotional expense	6,197,766	7,341,969	8,653,035	10,152,894	11,866,195	13,820,627	15,202,690	16,722,959	18,395,255	20,234,781
Professional fees (legal, audit, consultants, etc.)	774,721	917,746	1,081,629	1,269,112	1,483,274	1,727,578	1,900,336	2,090,370	2,299,407	2,529,348
Depreciation expense	8,269,868	8,269,868	8,269,868	8,298,705	8,294,055	8,435,235	8,468,618	8,463,235	8,463,235	8,501,880
Amortization of pre-operating costs	291,000	291,000	291,000	291,000	291,000	-	-	-	-	-
Bad debt expense	774,721	917,746	1,081,629	1,269,112	1,483,274	1,727,578	1,900,336	2,090,370	2,299,407	2,529,348
Miscellaneous expense 1	543,000	597,300	657,030	722,733	795,006	874,507	961,958	1,058,153	1,163,969	1,280,366
Subtotal	24,252,774	26,477,498	28,990,247	31,855,217	35,049,633	38,506,036	41,546,499	44,848,904	48,487,471	52,528,539
Operating Income	12,579,658	18,026,789	24,351,941	31,647,410	40,112,099	50,011,596	55,822,896	62,257,430	69,329,497	77,070,125
Other income (interest on cash)	93,158	351,343	729,075	1,127,049	1,547,228	2,000,760	2,503,599	3,028,465	3,555,380	4,099,520
Gain / (loss) on sale of computer equipment	-	-	116,250	-	-	250,824	-	-	406,610	324,615
Gain / (loss) on sale of office vehicles	-	-	-	-	462,496	-	-	-	-	-
Earnings Before Interest & Taxes	12,672,816	18,378,132	25,197,266	32,774,459	42,121,823	52,263,180	58,326,495	65,285,895	73,291,487	81,494,260
Tax	3,555,485	5,552,346	7,939,043	10,591,060	13,862,638	17,412,113	19,534,273	21,970,063	24,772,020	27,642,991
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>9,117,331</b>	<b>12,825,786</b>	<b>17,258,223</b>	<b>22,183,399</b>	<b>28,259,185</b>	<b>34,851,067</b>	<b>38,792,222</b>	<b>43,315,832</b>	<b>48,519,467</b>	<b>53,851,270</b>

## 12.2 Balance Sheet

Calculations											SMEDA
Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Assets</b>											
<i>Current assets</i>											
Cash & Bank	1,014,242	6,438,417	21,669,027	36,656,974	53,506,960	70,271,268	89,789,550	110,498,384	131,778,801	152,651,613	175,309,995
Accounts receivable		12,735,136	13,910,687	16,433,223	19,321,160	22,622,352	26,390,571	29,818,477	32,800,325	36,080,357	39,688,393
Finished goods inventory		5,414,706	6,397,051	7,521,719	8,807,350	10,274,890	11,947,864	13,142,651	14,456,916	15,902,608	17,492,868
Equipment spare part inventory	143,000	177,870	220,114	271,181	332,789	406,982	470,064	542,924	627,077	724,274	-
Raw material inventory	7,203,282	-	-	-	-	-	-	-	-	-	-
<b>Total Current Assets</b>	<b>8,360,524</b>	<b>24,766,129</b>	<b>42,196,879</b>	<b>60,883,097</b>	<b>81,968,260</b>	<b>103,575,492</b>	<b>128,598,050</b>	<b>154,002,436</b>	<b>179,663,119</b>	<b>205,358,852</b>	<b>232,491,256</b>
<i>Fixed assets</i>											
Land	14,400,000	14,400,000	14,400,000	14,400,000	14,400,000	14,400,000	14,400,000	14,400,000	14,400,000	14,400,000	14,400,000
Building/Infrastructure	23,405,900	22,235,605	21,065,310	19,895,015	18,724,720	17,554,425	16,384,130	15,213,835	14,043,540	12,873,245	11,702,950
Electricity Security	201,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000
Machinery & equipment	65,866,148	59,279,533	52,692,918	46,106,304	39,519,689	32,933,074	26,346,459	19,759,844	13,173,230	6,586,615	-
Furniture & fixtures	1,064,600	958,140	851,680	745,220	638,760	532,300	425,840	319,380	212,920	106,460	-
Office vehicles	1,156,240	924,992	693,744	462,496	231,248	1,862,136	1,489,709	1,117,282	744,854	372,427	-
Computer equipment	465,000	311,550	158,100	542,946	360,658	183,021	628,527	417,507	211,869	727,599	483,316
Office equipment	218,000	196,200	174,400	152,600	130,800	109,000	87,200	65,400	43,600	21,800	-
<b>Total Fixed Assets</b>	<b>106,776,888</b>	<b>98,507,020</b>	<b>90,237,152</b>	<b>82,505,580</b>	<b>74,206,875</b>	<b>67,774,956</b>	<b>59,962,865</b>	<b>51,494,248</b>	<b>43,031,013</b>	<b>35,289,146</b>	<b>26,787,266</b>
<i>Intangible assets</i>											
Pre-operation costs	1,455,000	1,164,000	873,000	582,000	291,000	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>1,455,000</b>	<b>1,164,000</b>	<b>873,000</b>	<b>582,000</b>	<b>291,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>116,592,412</b>	<b>124,437,149</b>	<b>133,307,031</b>	<b>143,970,678</b>	<b>156,466,134</b>	<b>171,350,448</b>	<b>188,560,915</b>	<b>205,496,683</b>	<b>222,694,132</b>	<b>240,647,998</b>	<b>259,278,522</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Accounts payable		550,872	618,898	695,110	780,479	876,093	982,095	1,081,367	1,190,731	1,311,221	1,409,602
<b>Total Current Liabilities</b>	<b>-</b>	<b>550,872</b>	<b>618,898</b>	<b>695,110</b>	<b>780,479</b>	<b>876,093</b>	<b>982,095</b>	<b>1,081,367</b>	<b>1,190,731</b>	<b>1,311,221</b>	<b>1,409,602</b>
<i>Shareholders' equity</i>											
Paid-up capital	116,592,412	116,592,412	116,592,412	116,592,412	116,592,412	116,592,412	116,592,412	116,592,412	116,592,412	116,592,412	116,592,412
Retained earnings		7,293,865	16,095,720	26,683,155	39,093,243	53,881,943	70,986,408	87,822,904	104,910,989	122,744,365	141,276,508
<b>Total Equity</b>	<b>116,592,412</b>	<b>123,886,277</b>	<b>132,688,133</b>	<b>143,275,567</b>	<b>155,685,655</b>	<b>170,474,355</b>	<b>187,578,820</b>	<b>204,415,317</b>	<b>221,503,402</b>	<b>239,336,777</b>	<b>257,868,920</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>116,592,412</b>	<b>124,437,149</b>	<b>133,307,031</b>	<b>143,970,678</b>	<b>156,466,134</b>	<b>171,350,448</b>	<b>188,560,915</b>	<b>205,496,683</b>	<b>222,694,132</b>	<b>240,647,998</b>	<b>259,278,522</b>

## 12.3 Cash Flow Statement

Calculations											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		9,117,331	12,825,786	17,258,223	22,183,399	28,259,185	34,851,067	38,792,222	43,315,832	48,519,467	53,851,270
Add: depreciation expense		8,269,868	8,269,868	8,269,868	8,298,705	8,294,055	8,435,235	8,468,618	8,463,235	8,463,235	8,501,880
amortization of pre-operating costs		291,000	291,000	291,000	291,000	291,000	-	-	-	-	-
Accounts receivable		(12,735,136)	(1,175,551)	(2,522,536)	(2,887,937)	(3,301,192)	(3,768,219)	(3,427,906)	(2,981,848)	(3,280,032)	(3,608,036)
Finished goods inventory		(5,414,706)	(982,346)	(1,124,668)	(1,285,631)	(1,467,540)	(1,672,974)	(1,194,786)	(1,314,265)	(1,445,692)	(1,590,261)
Equipment inventory	(143,000)	(34,870)	(42,244)	(51,066)	(61,609)	(74,192)	(63,082)	(72,860)	(84,153)	(97,197)	724,274
Raw material inventory	(7,203,282)	7,203,282	-	-	-	-	-	-	-	-	-
Accounts payable		550,872	68,027	76,212	85,369	95,614	106,002	99,272	109,364	120,490	98,381
Cash provided by operations	(7,346,282)	7,247,641	19,254,540	22,197,032	26,623,296	32,096,930	37,888,029	42,664,560	47,508,165	52,280,271	57,977,508
<i>Financing activities</i>											
Issuance of shares	116,592,412	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	116,592,412	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(108,231,888)	-	-	(538,296)	-	(1,862,136)	(623,144)	-	-	(721,368)	-
Cash (used for) / provided by investing activities	(108,231,888)	-	-	(538,296)	-	(1,862,136)	(623,144)	-	-	(721,368)	-
NET CASH	1,014,242	7,247,641	19,254,540	21,658,736	26,623,296	30,234,794	37,264,884	42,664,560	47,508,165	51,558,903	57,977,508

## 13 KEY ASSUMPTIONS

### 13.1 Operating Cost Assumptions

Description	Details
Water Expense	2% of Direct staff salaries
Communication Expenses	3% of Direct staff salaries
Promotional Expenses	2% of revenue
Depreciation Method	Straight line depreciation
Depreciation Rate	5% on Building / Infrastructure 10% on Machinery & Equipment 33% on Office Equipment 10% on Furniture & Fixture 20% on vehicles
Inflation Growth Rate	10%
Electricity Price Growth Rate	10%
Salaries Growth Rate	10%
Gas price growth rate	5%

### 13.2 Production Cost Assumptions

Description	Details
Maximum Operational Capacity	Diapers: 26,400,000 Packages: 1,278,750
Diaper Packs and Pieces	Packs: Small (Pack of 12); 770,000 Packs Medium (Pack of 24); 385,000 Packs Large (Pack of 64); 123,750 Packs
Production Capacity in First Year	65%
Percentage Increase in Production Capacity Annual	5%

Maximum Production Capacity	90%
<b>Raw Material Cost Diaper</b>	
Size 0	Rs.14.05
Size 1	Rs.14.35
Size 2	Rs.14.66
Size 3	Rs.14.98
Size 4	Rs.15.32
Packing Cost Per Diaper	Rs.0.47
Cost of Goods Sold Growth Rate	10%

### 13.3 Revenue Assumptions

Description	Details
Sale Price Growth Rate	10%
Packages Sold Year 1	790,575
Weighted Average Price Per Package	Rs.392
Shift Length (Hours)	8
Days Operational / Year	300