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# Pre-Feasibility Study

## (Polypropylene Woven Bags Manufacturing Unit)



**Small and Medium Enterprises Development Authority**

**Ministry of Industries & Production**

**Government of Pakistan**

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**February 2016**

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## 1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data/information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on as is where is basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision, including taking professional advice from a qualified consultant/technical expert before taking any decision to act upon the information.

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### ***Document Control***

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For information	Provincial Chief (Sindh) mkumar@smeda.org.pk

## 2 EXECUTIVE SUMMARY:

**Polypropylene Woven Bags Manufacturing Unit** is proposed to be located at semi-urban areas. Products include **Polypropylene Woven Bags**, at initial capacity utilization of **90%** on 02-shift basis.

The total project cost for setting up a Polypropylene Woven Bags Manufacturing Unit is estimated at **Rs. 205 million** out of which **Rs. 111 million** is capital cost and **Rs.94 million** is working capital. The project is proposed to be financed through **50%** debt and **50%** equity. The NPV is projected around **Rs. 317 million** with an IRR of **38%** and a Payback Period of **3.57** years.

The most critical consideration or factors for success of the project are:

- Most significant considerations
  - Availability of continuous power supply
  - Securing a regular source of raw material at competitive prices
  - Machine operators with technical knowledge.
  - Credit Recovery
  
- Equally important factor
  - Background Experience
  - Marketing Skill
  - Product size and quality with respect to market demand

### 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 **Polypropylene Woven Bags 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 it's successful management. Apart from carefully studying the whole document one must consider critical aspects provided later on, which form basis of any Investment Decision.

## 5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

Polypropylene woven bags manufacturing unit either import polypropylene granules or purchase from the local suppliers, convert into tape yarn where this tape yarn is woven on an automatic loom to produce polypropylene cloth. It is used to store and transport industrial and agricultural products like fertilizers, sugar, pigments, maize, plastic granules, rice, flours, pulses, polymers etc. Polypropylene sacks are usually suitable for packing most of the goods that have been traditionally packed in jute bags.

Polypropylene bags are suitable for almost all the products and are better suited for storage purposes due to their strength, durability and ability to withstand water and pests. The use of polypropylene bags are steadily increasing in the agricultural sector, with increasing agricultural yields and related industries, the scope of the industry is increasing.

### Plastic Industry of Pakistan<sup>1</sup>

Pakistan's economy achieved an impressive GDP growth rate during the last three decades. Pakistan's plastic industry is thriving at an average annual growth rate of 15% with a total estimated production capacity of 624,200 M/T per annum. Adding further strength to the industrial progress, Pakistan has established successful export markets for its plastic goods.

Its contribution to the Gross Domestic Product (GDP) was 1.69%. The per capita consumption of plastic in Pakistan is 3.1 kg. There are some 6,000 plastic product manufacturers in the country and 600,000 people are directly and indirectly involved with this business.

Pakistan imports 80-90 % raw material for plastic industry from different countries. The total consumption of raw material used in the country is around 450,000 tons per annum. The country imports raw material from UAE and Far Eastern countries, special grade raw material is imported from Germany and USA.

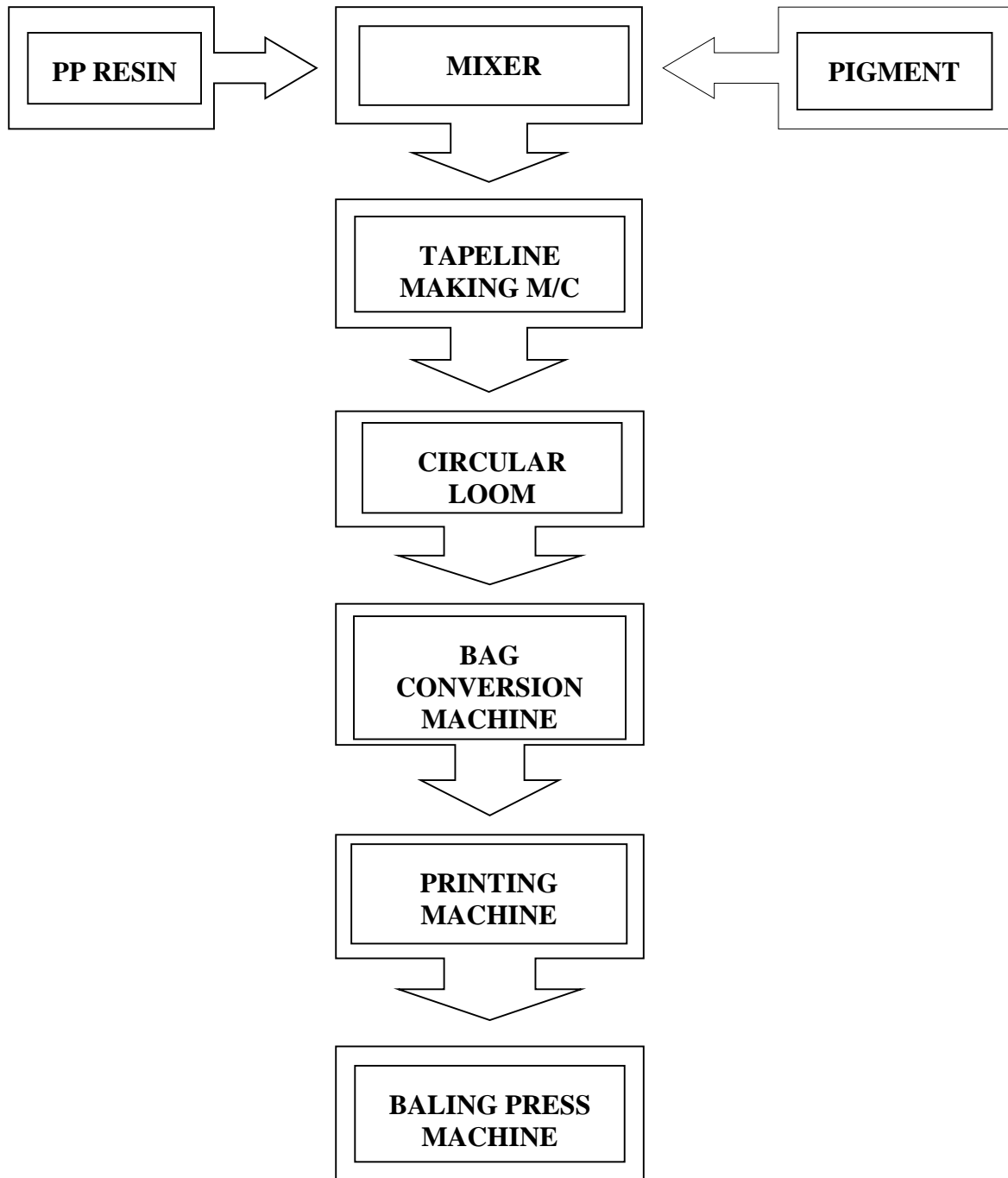
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<sup>1</sup> Plastic, Packing & Print Asia 2016 (<http://plastpackasia.com.pk/>)

Following key parameters must be addressed as per pre-feasibility study under preparation:

- **Technology:** The polypropylene tapes are manufactured by slitting films of PP (Polypropylene) or HDPE (High Density Polyethylene) which are produced by blown extrusion technique. In this process, the granules of plastic are fed to the extruder through the hopper. Molten plastics are extruded through circular die and the tube is inflated by blowing with air to a desired diameter, and pulling it away with a pair of nip rolls.  
From bobbins carrying polypropylene yarn, fabric is made using warping and yarn winding machine. The fabric is then woven on looms and finally cut to size and stitched to bags of required dimensions. Whenever required, the bags are screen-printed using specially prepared ink. In some cases, laminated bags are required and as such before stitching and printing the fabric has to be laminated by extrusion coating of LDPE (Low Density Polyethylene). Lamination should be done from outside.
- **Location:** The unit is proposed to be established as a manufacturing facility at a location where utilities, infrastructure and other provisions essential for the production process are conveniently available such as industrial zones in Karachi, Hub, Hyderabad, Lahore, Gujranwala, Multan, Rawalpindi and Peshawar etc.
- **Product:** Product line-up involves woven bags of various sizes, fabric can also be made by slitting one side of the woven fabric which is in the form of a tube. This fabric is used for packing purposes in the textile industry and especially for export products. There is also a market for polypropylene bags like shopping bags and luggage bags made from polypropylene which are often used. However the main product mix of the company will consist of 10kg, 50 kg and 100 kg bags.
- **Target Market:** Target segment will be any producers, distributors and manufacturers of agricultural goods, industrial goods that can be packed in polypropylene bags. Major target customers can be from the sugar, rice, wheat, cotton, fertilizer, chemicals and other industries. The production line can be expanded further to cater to the cement industry as well but this will require some expansion in the production line and additional machinery will be needed.
- **Employment Generation:** Proposed project will provide direct employment to 83 people approximately. Financial analysis shows the unit shall be profitable from the very first year of operation.

**5.1 Production Process Flow:**





## 5.2 Installed and Operational Capacities

Our proposed plant under consideration will have an installed production capacity of 16.8 million bags per annum. Different sizes of bags can be made to meet the demands of particular customers. For instance bags of 10 kg, 50 kg, 100 kg etc. are possible by carrying out the required adjustment of the equipment. The average order size in the industries like sugar, rice, fertilizers wheat, seeds etc. ranges between 200,000 to 300,000 bags. We estimate that 18 looms plant can easily meet the annual requirements of selected buyers.

## 6 CRITICAL FACTORS

Main critical success factors that affect the decision to invest in the proposed business setup are:

- Critical success factors would be the maintenance of product quality and standards since the core issue in packaging material is that it should be effective in protecting the contents from the environment.
- Maintaining quality control and following of the product specifications are key points for any product. Securing a regular source of polypropylene granules at competitive rates will also be an advantage.
- Availability of continuous electric and water supply.

### Marketing:

Marketing of project would be dependent on core of industrial tactics as to be applied based on respective dynamics, knowing competitors as there are a number of manufacturers already in the industry. Substantial experience in polypropylene woven bags would definitely be a major advantage when it comes to marketing/trading.

### Pricing:

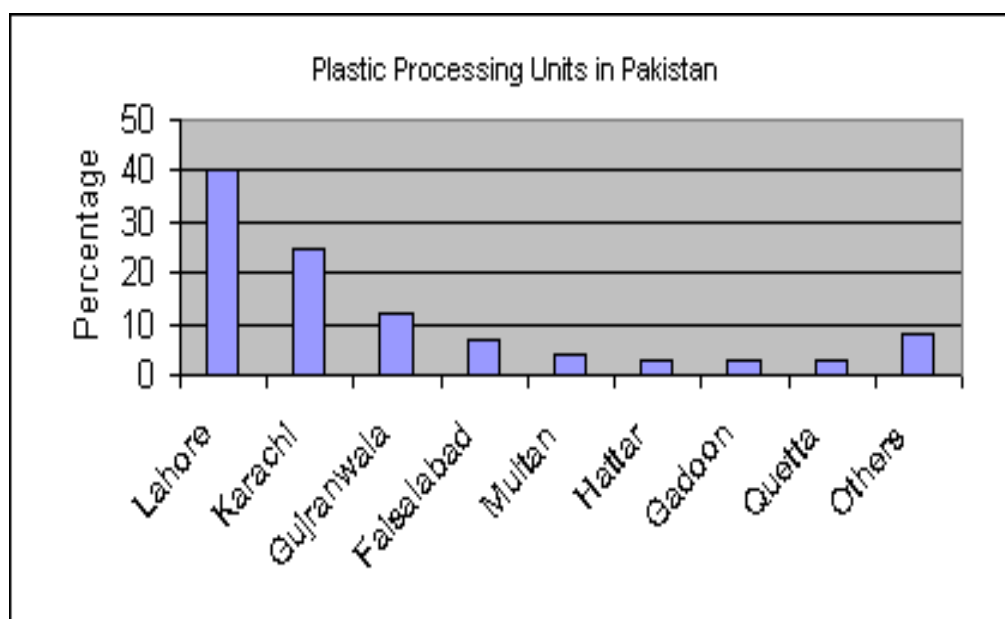
Pricing would be based on the market rates and would be dependent on the world price of polypropylene which is in turn linked with the world oil prices. Pricing would have to be competitive in order to attract a steady clientele. Having contact with buyers is crucial part of setup as it is the topmost priority in-between manufacturing.

## 7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT:

Plastic industry in Pakistan is expanding at an average annual growth of 15%. The significant growth rate, in addition to entrepreneurial efforts, is also due to simplified tax policy on local production and reduction in import tariff on plastic raw material. Plastic industry is contributing more than Rs. 7.5 billion annually to the national exchequer in shape of custom duty, sales tax and income tax.<sup>2</sup>

Plastic consumption has traditionally been the highest in USA, Europe and Japan amounting to 75% of global consumption. This is primarily due to a spread-out effect as consumption in other parts of the world has increased. Consumption in China, Taiwan, Korea, Thailand, Malaysia and India has increased manifold during the last few years. In addition to domestic consumption, these countries have become leading exporters of plastic products to USA, Europe, Japan and other regions. The reason for this shift is the comparatively low cost of production in these countries.

Industry is presently fragmented into organized and un-organized sectors. About 40% of the units are located in and around Lahore and the remaining at Karachi, Gujranwala, Faisalabad, Multan, Hatter, Gadoon, Quetta and other parts of the country. Percentage-wise units in different locations are shown in the graph below.<sup>3</sup>



<sup>2</sup> PITAD & Plastic, Packing & Print Asia 2016 (<http://plastpackasia.com.pk/>)

<sup>3</sup> Trade Map

## 8 POTENTIAL TARGET CUSTOMERS / MARKETS

### MARKET POTENTIAL

Market for plastic materials is growing rapidly due to varied and rising use of plastic goods over recent years, substituting wood, tin, aluminum, glass, china clay, etc. Target customers will be any producers, distributors and manufacturers of agricultural goods, industrial goods that can be packed in polypropylene bags. Major target customers can be from the sugar, rice, wheat, cotton, fertilizer, chemicals and other industries. The production line can be expanded further to cater to the cement industry as well but this will require some expansion in the production line and additional machinery will be needed.

### 9 PROJECT COST SUMMARY

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

#### 9.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of 443,523,600 million in the year one. The capacity utilization during year one is worked out at 90% in subsequent years up to the maximum capacity utilization.

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

##### 9.1.1 Project Economics

Description	Details
Internal Rate of Return (IRR)	38%
Payback Period (yrs.)	3.57
Net Present Value (Rs.)	317,177,714

#### 9.2 Project Financing

Following table provides details of the equity required and variables related to bank loan:

### 9.2.1 Project Financing

Description	Details
Total Equity (50%)	Rs.102,626,204
Bank Loan (50%)	Rs.102,626,204
Markup to the Borrower (%age / annum)	12%
Tenure of the Loan (Years)	05 Years

### 9.3 Project Cost

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

#### 9.3.1 Project Cost

Description	Amount (Rs.)
<b>Capital Cost</b>	
Plant and Machinery	103,388,110
Furniture & Fixture	727,500
Office Equipment	620,000
Pre-operating Cost	6,203,193
<b>Total Capital Cost</b>	<b>110,938,803</b>
<b>Working Capital</b>	
Raw Material Inventory	82,087,259
Up-front Building Rent (06 months security deposit + 06 months advance rent)	5,040,000
Cash	1,500,000
Upfront insurance payment	5,169,406
Equipment spare part inventory	516,941
<b>Total Working Capital</b>	<b>94,313,605</b>
<b>Total Project Cost</b>	<b>205,252,408</b>

## 9.4 Space requirement

**Table 9.4: Space Requirement**

Description	Estimated Area (Sqft)	Monthly Rent (Rs.)
Management and Production	35,000	420,000

## 9.5 Machinery & Equipment Requirement

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

### 9.5.1 Machinery & Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Tapeline Capacity: 260 KG/Hr. (6Tons/Day)*	01	32,330,000	32,330,000
Circular Loom ;Speed-150 meter/Hour 1100ppm*	18	1,749,000	31,482,000
Bag Conversion system*	01	3,948,500	3,948,500
6 Color Printing Machine (Imported)*	01	2,332,000	2,332,000
Hydraulic Bailing Press*	01	477,000	477,000
Cheese Tubes*	30,000	164.3	4,929,000
Others	-	-	1,000,000
Installation/Duty/Withholding/Sales Tax	-	-	19,889,610
Genset (500 KVA)*	01	7,000,000	7,000,000
<b>Total</b>			<b>103,388,110</b>

*\*The above price details are of new plant, machinery & equipment*

(TRADE POLYMERZ COMPANY)

## 9.6 Furniture & Fixtures Requirement

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

### 9.6.1 Furniture & Fixture

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Table and Chair set (Executive)	01	50,000	50,000
Table and Chair set (Normal)	07	30,000	210,000
Cabinets (Whole Closet)	10	14,000	140,000
Sofa Sets	01	50,000	50,000
Curtains/Interior Decor	01	50,000	50,000
Air Conditioner (Split Unit)	01	80,000	80,000
Chairs and stools	30	4,500	135,000
Electric wiring and lighting	25	500	12,500
<b>Total</b>			<b>727,500</b>

## 9.7 Office Equipment Requirement

Details of the office equipment required for the project are given below:

### 9.7.1 Office Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Desktop Computers with UPS/Laptops*	05	50,000	250,000
Printer	02	35,000	70,000
Scanner	01	15,000	15,000
Fax Machine	01	35,000	35,000
Photo Copier	01	70,000	70,000
CCTV Systems	01	150,000	150,000

Steel Safe	01	20,000	20,000
Telephones	05	2,000	10,000
<b>Total</b>			<b>620,000</b>

*\*Laptops are suggested and are more suitable because of their portability, backup battery, space requirement and energy efficiency.*

## 9.8 Office Vehicle Requirement

Considering more efficient and viable option regarding mobility; vehicle service is to be outsourced for matter of transportation of raw material and delivering finished good inventory.

## 9.9 Human Resource Requirement

In order to run operations of Polypropylene bags smoothly, details of human resources required along with number of employee and monthly salaries are recommended as under:

### 9.9.1 Human Resource Requirement

Description	No. of Employees	Monthly Salary per person (Rs)	Total Monthly Salary (Rs)
Owner/ Manager (Single shift)	01	100,000	100,000
Production Manager	02	50,000	100,000
Quality Manager	02	25,000	50,000
Accounts and Admin. (Single shift)	01	40,000	40,000
Cashier (Single shift)	01	25,000	25,000
Shift In-charge (Production)	02	35,000	70,000
Extruder Operator	02	18,000	36,000
Fitter (Operator)	02	18,000	36,000
Winder Operator	08	18,000	144,000
Circular Loom Workers	26	15,000	390,000
Foreman (Loom)	02	25,000	50,000
Fitter (Loom)	02	18,000	36,000
Operator Cutting and Finishing Machine	04	18,000	72,000
Operator Printing Machine	02	18,000	36,000

Electric Supervisor	02	35,000	70,000
Electricians	02	18,000	36,000
Quality Inspector	02	18,000	36,000
Store Keeper (Single shift)	02	18,000	36,000
Helpers	12	15,000	180,000
Peon (Single shift)	02	15,000	30,000
Guards	04	15,000	60,000
<b>Total</b>	<b>83</b>		<b>1,633,000</b>

### 9.10 Utilities and other costs

An essential cost to be borne by the project is the cost of electricity. The direct and indirect electricity expenses are estimated to be around Rs. 23,153,280 and Rs. 212,132 respectively in the first year. Furthermore, promotional expense being essential for marketing of polypropylene bags is estimated to be Rs. 1,330,571.

### 9.11 Revenue Generation

Based on the capacity utilization of 90% for polypropylene bags respectively, sales revenue during the first year of operations is estimated as under:

#### 9.11.1 Revenue Generation – Year 1

Description	No. of Units Produced 100 gm (No.)	Finished Goods Inventory 100 gm (No.)	Units available for Sale 100 gm (No.)	Sale Price / unit 100 gm (Rs.)	Sales Revenue 100 gm (Rs.)
PP woven bags	15,163,200	379,080	14,784,120	30	443,523,600



## 10 CONTACT DETAILS

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

### 10.1 Machinery Suppliers

#### Machinery Supplier - 1

<b>Company Name</b>	<b>Trade Polymerz (Pvt) Ltd.</b>		
<b>Contact Person</b>	Mr. Kashal Khan		
<b>Address</b>	703, 7 <sup>th</sup> Floor, Tahir Plaza, Block 7-8, K.C.H.S Shahra-e-Faisal, Karachi		
<b>Phone</b>	(021) 34312885-7	<b>Fax</b>	(021) 34312887
<b>E-mail</b>	tradepolymerz@gmail.com		
<b>Website</b>	www.tradepolymerz.com		

#### Machinery Supplier - 2

<b>Company Name</b>	<b>K-Group of Companies</b>		
<b>Contact Person</b>	Mr. Shaikh Muhammad		
<b>Address</b>	245/2/F, PECHS, Block-6, Karachi-Pakistan		
<b>Phone</b>	(021) 34398500	<b>Fax</b>	(021) 34549986
<b>E-mail</b>	k@kgroup.com.pk		
<b>Website</b>	http://www.kgroup.com.pk		

## 10.2 Raw Material Suppliers

### Raw Material Supplier – 1

<b>Company Name</b>	<b>Masoom Corporation</b>		
<b>Contact Person</b>	Mr. Hani Raza		
<b>Address</b>	SA-14, 2 <sup>nd</sup> floor, Techno City Mall, Karachi		
<b>Phone</b>	(021) 32270601-3	<b>Fax</b>	(021) 32270604

### Raw Material Supplier – 2

<b>Company Name</b>	<b>Bin Rasheed</b>		
<b>Contact Person</b>	Mr. Javed		
<b>Address</b>	10-Abbot Road, Lahore-54000-Pakistan		
<b>Phone</b>	(042) 36296901-5	<b>Fax</b>	(042) 36368877
<b>E-mail</b>	service@binrasheed.com		
<b>Website</b>	<a href="http://www.binrasheed.com">www.binrasheed.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>
Ministry of Education, Training & Standards in Higher Education	<a href="http://moptt.gov.pk">http://moptt.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 Balochistan	<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 Jamu 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>
Pakistan Horticulture Development and Export Company (PHDEC)	<a href="http://www.phdec.org.pk">www.phdec.org.pk</a>
Punjab Vocational Training Council (PVTTC)	<a href="http://www.pvtc.gop.pk">www.pvtc.gop.pk</a>
Technical Education and Vocational Training Authority (TEVTA)	<a href="http://www.tevta.org">www.tevta.org</a>
Pakistan Readymade Garment Technical Training Institute	<a href="http://www.prgmea.org/prgtti/">www.prgmea.org/prgtti/</a>
Livestock & Dairy Development Department, Government of Punjab.	<a href="http://www.livestockpunjab.gov.pk">www.livestockpunjab.gov.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	443,523,600	511,227,288	574,581,665	638,935,423	703,013,969	773,315,366	850,646,902	935,711,592	1,029,282,752	1,132,211,027	
<i>Cost of sales</i>											
Cost of goods sold 1	328,349,037	361,268,132	387,582,361	411,401,453	432,085,232	453,689,494	476,373,968	500,192,667	525,202,300	551,462,415	
Operating costs 1 (direct labor)	15,701,400	17,662,304	19,382,155	21,274,948	23,352,453	25,626,081	28,121,072	30,858,979	33,863,453	37,160,447	
Operating costs 2 (machinery maintenance)	3,101,643	3,256,725	3,419,562	3,590,540	3,770,067	3,958,570	4,156,499	4,364,324	4,582,540	4,811,667	
Operating costs 3 (direct electricity)	23,153,280	25,468,608	28,015,469	30,817,016	33,898,717	37,288,589	41,017,448	45,119,193	49,631,112	54,594,223	
Operating costs 4 (direct water)	1,478,412	1,704,091	1,915,272	2,129,785	2,343,380	2,577,718	2,835,490	3,119,039	3,430,943	3,774,037	
Operating costs 5 (direct genset)	12,280,320	13,508,352	14,859,187	16,345,106	17,979,617	19,777,578	21,755,336	23,930,870	26,323,957	28,956,352	
<b>Total cost of sales</b>	<b>384,064,092</b>	<b>422,868,213</b>	<b>455,174,006</b>	<b>485,558,847</b>	<b>513,429,465</b>	<b>542,918,029</b>	<b>574,259,812</b>	<b>607,585,070</b>	<b>643,034,304</b>	<b>680,759,141</b>	
<b>Gross Profit</b>	<b>59,459,508</b>	<b>88,359,075</b>	<b>119,407,659</b>	<b>153,376,576</b>	<b>189,584,504</b>	<b>230,397,336</b>	<b>276,387,090</b>	<b>328,126,522</b>	<b>386,248,448</b>	<b>451,451,886</b>	
	13%	17%	21%	24%	27%	30%	32%	35%	38%	40%	
<i>General administration &amp; selling expenses</i>											
Administration expense	3,492,000	3,831,986	4,205,074	4,614,486	5,063,758	5,556,773	6,097,788	6,691,478	7,342,969	8,057,891	
Administration benefits expense	279,360	306,559	336,406	369,159	405,101	444,542	487,823	535,318	587,438	644,631	
Building rental expense	5,040,000	5,544,000	6,098,400	6,708,240	7,379,064	8,116,970	8,928,667	9,821,534	10,803,688	11,884,056	
Electricity expense	212,132	233,345	256,680	282,348	310,582	341,641	375,805	413,385	454,724	500,196	
Travelling expense	104,760	114,960	126,152	138,435	151,913	166,703	182,934	200,744	220,289	241,737	
Communications expense (phone, fax, mail, internet, etc.)	69,840	76,640	84,101	92,290	101,275	111,135	121,956	133,830	146,859	161,158	
Office expenses (stationary, entertainment, janitorial services, etc)	69,840	76,640	84,101	92,290	101,275	111,135	121,956	133,830	146,859	161,158	
Promotional expense	1,330,571	1,533,682	1,723,745	1,916,806	2,109,042	2,319,946	2,551,941	2,807,135	3,087,848	3,396,633	
Insurance expense	5,169,406	4,652,465	4,135,524	3,618,584	3,101,643	2,584,703	2,067,762	1,550,822	1,033,881	516,941	
Professional fees (legal, audit, consultants, etc.)	2,217,618	2,556,136	2,872,908	3,194,677	3,515,070	3,866,577	4,253,235	4,678,558	5,146,414	5,661,055	
Depreciation expense	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	
Amortization of pre-operating costs	1,240,639	1,240,639	1,240,639	1,240,639	1,240,639	-	-	-	-	-	
Bad debt expense	8,870,472	10,224,546	11,491,633	12,778,708	14,060,279	15,466,307	17,012,938	18,714,232	20,585,655	22,644,221	
Miscellaneous expense 1	2,000,000	2,200,000	2,420,000	2,662,000	2,928,200	3,221,020	3,543,122	3,897,434	4,287,178	4,715,895	
<b>Subtotal</b>	<b>40,570,198</b>	<b>43,065,158</b>	<b>45,548,925</b>	<b>48,182,221</b>	<b>50,941,402</b>	<b>52,781,014</b>	<b>56,219,487</b>	<b>60,051,860</b>	<b>64,317,363</b>	<b>69,059,133</b>	
<b>Operating Income</b>	<b>18,889,310</b>	<b>45,293,918</b>	<b>73,858,734</b>	<b>105,194,355</b>	<b>138,643,101</b>	<b>177,616,322</b>	<b>220,167,603</b>	<b>268,074,662</b>	<b>321,931,085</b>	<b>382,392,753</b>	
Other income (interest on cash)	2,176,375	4,762,163	6,328,027	7,708,341	9,597,178	13,181,511	18,598,667	24,750,312	31,700,237	48,734,820	
<b>Earnings Before Interest &amp; Taxes</b>	<b>21,065,685</b>	<b>50,056,081</b>	<b>80,186,761</b>	<b>112,902,695</b>	<b>148,240,279</b>	<b>190,797,833</b>	<b>238,765,669</b>	<b>292,824,974</b>	<b>353,631,322</b>	<b>431,127,574</b>	
Interest expense on long term debt (Project Loan)	12,315,144	10,376,621	8,205,474	5,773,790	3,050,304	-	-	-	-	-	
<b>Subtotal</b>	<b>12,315,144</b>	<b>10,376,621</b>	<b>8,205,474</b>	<b>5,773,790</b>	<b>3,050,304</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	
<b>Earnings Before Tax</b>	<b>8,750,541</b>	<b>39,679,460</b>	<b>71,981,287</b>	<b>107,128,905</b>	<b>145,189,975</b>	<b>190,797,833</b>	<b>238,765,669</b>	<b>292,824,974</b>	<b>353,631,322</b>	<b>431,127,574</b>	
Tax	3,062,689	13,887,811	25,193,450	37,495,117	50,816,491	66,779,242	83,567,984	102,488,741	123,770,963	150,894,651	
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>5,687,851</b>	<b>25,791,649</b>	<b>46,787,836</b>	<b>69,633,788</b>	<b>94,373,484</b>	<b>124,018,592</b>	<b>155,197,685</b>	<b>190,336,233</b>	<b>229,860,360</b>	<b>280,232,923</b>	
	1%	5%	8%	11%	13%	16%	18%	20%	22%	25%	
Balance brought forward		4,265,889	22,543,153	51,998,242	91,224,023	139,198,130	197,412,541	264,457,670	341,095,427	428,216,840	
Total profit available for appropriation	5,687,851	30,057,538	69,330,990	121,632,030	185,597,506	263,216,721	352,610,226	454,793,903	570,955,787	708,449,763	
Dividend	1,421,963	7,514,384	17,332,747	30,408,008	46,399,377	65,804,180	88,152,557	113,698,476	142,738,947	177,112,441	
Balance carried forward	4,265,889	22,543,153	51,998,242	91,224,023	139,198,130	197,412,541	264,457,670	341,095,427	428,216,840	531,337,322	

## 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	6,120,000	37,407,500	57,835,766	68,724,781	85,442,034	106,501,529	157,128,684	214,832,647	280,173,594	353,831,152	620,865,253
Accounts receivable		54,680,992	58,854,507	66,933,429	74,805,848	82,722,908	91,006,603	100,107,263	110,117,989	121,129,788	133,242,767
Finished goods inventory		9,847,797	10,577,454	11,385,406	12,142,166	12,835,737	13,572,951	14,356,495	15,189,627	16,075,858	17,018,979
Equipment spare part inventory	516,941	569,927	628,344	692,750	763,757	842,042	928,351	1,023,507	1,128,416	1,244,079	-
Raw material inventory	82,087,259	94,832,885	106,827,388	119,062,152	131,300,575	144,758,884	159,596,670	175,955,328	193,990,749	213,874,801	-
Pre-paid building rent	420,000	462,000	508,200	559,020	614,922	676,414	744,056	818,461	900,307	990,338	-
Pre-paid insurance	5,169,406	4,652,465	4,135,524	3,618,584	3,101,643	2,584,703	2,067,762	1,550,822	1,033,881	516,941	-
<b>Total Current Assets</b>	<b>94,313,605</b>	<b>202,453,565</b>	<b>239,367,183</b>	<b>270,976,121</b>	<b>308,170,945</b>	<b>350,922,216</b>	<b>425,045,076</b>	<b>508,644,523</b>	<b>602,534,564</b>	<b>707,662,957</b>	<b>771,126,998</b>
<i>Fixed assets</i>											
Machinery & equipment	103,388,110	93,049,299	82,710,488	72,371,677	62,032,866	51,694,055	41,355,244	31,016,433	20,677,622	10,338,811	-
Furniture & fixtures	727,500	654,750	582,000	509,250	436,500	363,750	291,000	218,250	145,500	72,750	-
Office equipment	620,000	558,000	496,000	434,000	372,000	310,000	248,000	186,000	124,000	62,000	-
<b>Total Fixed Assets</b>	<b>104,735,610</b>	<b>94,262,049</b>	<b>83,788,488</b>	<b>73,314,927</b>	<b>62,841,366</b>	<b>52,367,805</b>	<b>41,894,244</b>	<b>31,420,683</b>	<b>20,947,122</b>	<b>10,473,561</b>	<b>-</b>
<i>Intangible assets</i>											
Pre-operation costs	6,203,193	4,962,554	3,721,916	2,481,277	1,240,639	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>6,203,193</b>	<b>4,962,554</b>	<b>3,721,916</b>	<b>2,481,277</b>	<b>1,240,639</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>205,252,408</b>	<b>301,678,168</b>	<b>326,877,587</b>	<b>346,772,325</b>	<b>372,252,950</b>	<b>403,290,021</b>	<b>466,939,320</b>	<b>540,065,206</b>	<b>623,481,686</b>	<b>718,136,518</b>	<b>771,126,998</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Accounts payable		105,251,546	116,378,776	125,940,039	134,890,600	143,372,768	152,426,240	162,125,581	172,522,888	183,674,890	137,163,472
<b>Total Current Liabilities</b>	<b>-</b>	<b>105,251,546</b>	<b>116,378,776</b>	<b>125,940,039</b>	<b>134,890,600</b>	<b>143,372,768</b>	<b>152,426,240</b>	<b>162,125,581</b>	<b>172,522,888</b>	<b>183,674,890</b>	<b>137,163,472</b>
<i>Other liabilities</i>											
Deferred tax		3,062,689	16,950,500	18,092,919	18,092,919	18,092,919	14,474,335	10,855,752	7,237,168	3,618,584	-
Long term debt (Project Loan)	102,626,204	86,471,841	68,378,954	48,114,921	25,419,203	-	-	-	-	-	-
<b>Total Long Term Liabilities</b>	<b>102,626,204</b>	<b>89,534,530</b>	<b>85,329,454</b>	<b>66,207,840</b>	<b>43,512,123</b>	<b>18,092,919</b>	<b>14,474,335</b>	<b>10,855,752</b>	<b>7,237,168</b>	<b>3,618,584</b>	<b>-</b>
<i>Shareholders' equity</i>											
Paid-up capital	102,626,204	102,626,204	102,626,204	102,626,204	102,626,204	102,626,204	102,626,204	102,626,204	102,626,204	102,626,204	102,626,204
Retained earnings		4,265,889	22,543,153	51,998,242	91,224,023	139,198,130	197,412,541	264,457,670	341,095,427	428,216,840	531,337,322
<b>Total Equity</b>	<b>102,626,204</b>	<b>106,892,093</b>	<b>125,169,357</b>	<b>154,624,446</b>	<b>193,850,227</b>	<b>241,824,334</b>	<b>300,038,745</b>	<b>367,083,873</b>	<b>443,721,631</b>	<b>530,843,044</b>	<b>633,963,526</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>205,252,408</b>	<b>301,678,168</b>	<b>326,877,587</b>	<b>346,772,325</b>	<b>372,252,950</b>	<b>403,290,021</b>	<b>466,939,320</b>	<b>540,065,206</b>	<b>623,481,686</b>	<b>718,136,518</b>	<b>771,126,998</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		5,687,851	25,791,649	46,787,836	69,633,788	94,373,484	124,018,592	155,197,685	190,336,233	229,860,360	280,232,923
Add: depreciation expense		10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561	10,473,561
amortization of pre-operating costs		1,240,639	1,240,639	1,240,639	1,240,639	1,240,639	-	-	-	-	-
Deferred income tax		3,062,689	13,887,811	1,142,419	-	-	(3,618,584)	(3,618,584)	(3,618,584)	(3,618,584)	(3,618,584)
Accounts receivable		(54,680,992)	(4,173,515)	(8,078,922)	(7,872,419)	(7,917,060)	(8,283,695)	(9,100,660)	(10,010,726)	(11,011,799)	(12,112,979)
Finished goods inventory		(9,847,797)	(729,657)	(807,952)	(756,760)	(693,570)	(737,214)	(783,545)	(833,131)	(886,231)	(943,121)
Equipment inventory	(516,941)	(52,986)	(58,418)	(64,405)	(71,007)	(78,285)	(86,309)	(95,156)	(104,909)	(115,663)	1,244,079
Raw material inventory	(82,087,259)	(12,745,626)	(11,994,503)	(12,234,763)	(12,238,423)	(13,458,309)	(14,837,786)	(16,358,659)	(18,035,421)	(19,884,052)	213,874,801
Pre-paid building rent	(420,000)	(42,000)	(46,200)	(50,820)	(55,902)	(61,492)	(67,641)	(74,406)	(81,846)	(90,031)	990,338
Advance insurance premium	(5,169,406)	516,941	516,941	516,941	516,941	516,941	516,941	516,941	516,941	516,941	516,941
Accounts payable		105,251,546	11,127,230	9,561,263	8,950,562	8,482,167	9,053,472	9,699,341	10,397,306	11,152,002	(46,511,418)
Cash provided by operations	(88,193,605)	48,863,826	46,035,537	48,485,796	69,820,978	92,878,075	116,431,336	145,856,519	179,039,423	216,396,504	444,146,541
<i>Financing activities</i>											
Project Loan - principal repayment		(16,154,363)	(18,092,887)	(20,264,033)	(22,695,717)	(25,419,203)	-	-	-	-	-
Additions to Project Loan	102,626,204	-	-	-	-	-	-	-	-	-	-
Issuance of shares	102,626,204	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	205,252,408	(16,154,363)	(18,092,887)	(20,264,033)	(22,695,717)	(25,419,203)	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(110,938,803)	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by investing activities	(110,938,803)	-	-	-	-	-	-	-	-	-	-
<b>NET CASH</b>	<b>6,120,000</b>	<b>32,709,462</b>	<b>27,942,650</b>	<b>28,221,763</b>	<b>47,125,261</b>	<b>67,458,871</b>	<b>116,431,336</b>	<b>145,856,519</b>	<b>179,039,423</b>	<b>216,396,504</b>	<b>444,146,541</b>
Cash balance brought forward		6,120,000	37,407,500	57,835,766	68,724,781	85,442,034	106,501,529	157,128,684	214,832,647	280,173,594	353,831,152
Cash available for appropriation	6,120,000	38,829,462	65,350,150	86,057,528	115,850,041	152,900,905	222,932,865	302,985,204	393,872,070	496,570,099	797,977,693
Dividend		1,421,963	7,514,384	17,332,747	30,408,008	46,399,377	65,804,180	88,152,557	113,698,476	142,738,947	177,112,441
Cash balance	6,120,000	37,407,500	57,835,766	68,724,781	85,442,034	106,501,529	157,128,684	214,832,647	280,173,594	353,831,152	620,865,253
Cash carried forward	6,120,000	37,407,500	57,835,766	68,724,781	85,442,034	106,501,529	157,128,684	214,832,647	280,173,594	353,831,152	620,865,253

## 13 KEY ASSUMPTIONS

### 13.1 Operating Cost Assumptions

Description	Details
Number of shifts	02 shifts
Shift time span	12 hours
Operational days per year	312 days

### 13.2 Production Cost Assumptions

Description	Details
Production Capacity (No. of 100 gm bags)	16,848,000
Production capacity utilization %	90%
Capacity utilization growth rate	2%

### 13.3 Revenue Assumptions

Description	Details
Sales price per unit	Rs. 30
Total Revenue (first year)	Rs. 443,523,600

### 13.4 Financial Assumptions

Description	Details
Project Life	10 Years
Debt Equity Ratio	50 : 50
Interest Rate on Long Term Debt	12%
Long Term Debt Tenure	5 Years
Numbers of Payment / Year	12