
Pre-Feasibility Study

PLASTIC WASTE TILES MANUFACTURING UNIT



Small and Medium Enterprises Development Authority

Ministry of Industries & Production

Government of Pakistan

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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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2 EXECUTIVE SUMMARY

Converting plastic waste into tiles is an emerging concept, which is gaining popularity due to multiple advantages. They are more cost effective, take less processing time, light weight and easy to handle and install. Plastic tiles are produced from the plastic waste and are ideal to as pavement tiles in mosques, play areas, hospitals, gyms, lobby and laboratories, etc. These tiles are comprised of interlocking tab that hold the tiles together securely without the need for adhesives or the labor to apply them.

This particular pre-feasibility study is for setting up a 'Plastic Waste Tiles Manufacturing Unit'. The proposed unit will produce 2X2 ft size tiles, weighing one kilogram each. Produced tiles will be directly sold to business consumers and for general consumer through wholesalers in major cities of Pakistan. The proposed unit has capacity to produce 432,000 tiles (180 tiles / hour) in a year based on 300 working on single shift (08 hours shift) basis. However, initial capacity utilization is assumed 60%, while maximum capacity utilization will be 90%. This production capacity is estimated to be economically viable and justifies the capital as well as operational cost of the project. However, entrepreneur's knowledge of industry, competitive pricing and strong linkage with suppliers and wholesalers network are key factors for the success of this business.

Total project cost is estimated as Rs. 58.623 million with capital investment of Rs. 57.125 million and working capital Rs. 1.498 million. Based on an equity finance model, the project NPV is around Rs. 34.053 million, with an IRR of 28% and Payback Period of 4.23 years. The project will provide employment opportunities to 24 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 **Plastic Waste Tiles 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

Plastic Waste Tiles are strong, tough, and long-lasting. They can stay resilient in different conditions and are easy to apply and remove due to interlocking mechanism. These tiles are most commonly used in mosques, parks, roads, hospitals, gyms, homes, schools and laboratories etc. Plastic waste tiles are predominantly made of plastic waste of shopping bags, wasted plastic bottles and other miscellaneous sorted and unsorted plastic.

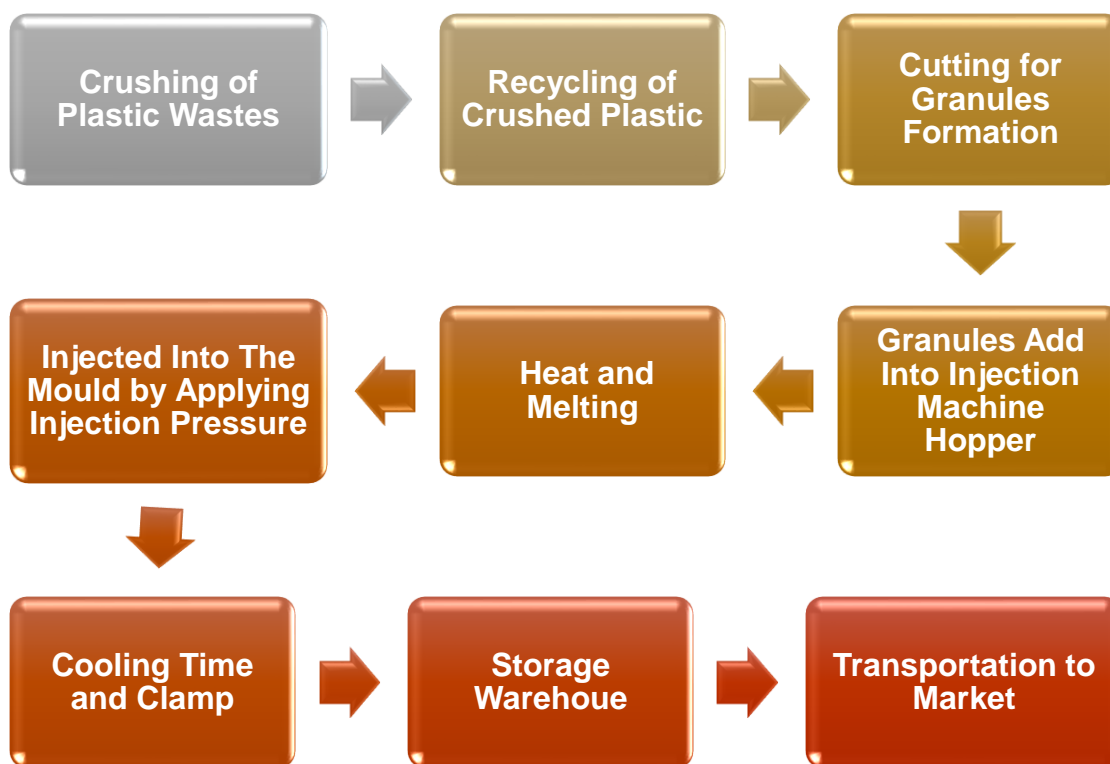
This particular pre-feasibility study is based on fully automatic moulding machine with hopper, screw barrel and clamping section. The unit will also be comprised of single extrusion plastic recycling plant. The installed machines can produce a batch of 180 tiles per hour. Proposed machines can produce different sizes of plastic waste tiles based on the customer's requirements; however, the proposed unit will mainly produce 2X2 ft size tiles weighing one kilogram each. Accordingly, around 180 tiles of 2X2 ft size per hour can be produced by the installed machines. The proposed unit will purchase raw material (i.e. plastic waste) preferably through agreements with waste management companies operating in the vicinity of the proposed plant to produce the tiles. Different size and design of moulds may be used to produce tiles as per the requirement of customers as well.

Financial analysis shows the unit shall be profitable from the very first year of operation. According to the proposed business model unit will mainly target to general household consumers through wholesalers and business buyers on order manufacturing basis. The legal status is proposed to be 'Sole Proprietorship'.

5.1 Production Process Flow

Production process starts with crushing of plastic wastes. This crushed plastic waste is recycled through extrusion process. The recycled plastic waste is formed into granules, which are poured into injection moulding machine. The granules are melted injected into moulds by applying pressure. Afterwards, specific cooling temperature and clamp force is applied to acquire the required shape of tiles.

Figure 1: Production Process Flow



5.2 Installed and Operational Capacities

The installed and operational capacity of the plastic waste tiles manufacturing unit mainly depends upon the installed machinery.

The pre-feasibility study is based on 01 plastic injection moulding machine with ten moulds along with plastic recycler unit and hopper etc. that can produce 432,000 tiles of 1 kilogram weight (180 tiles / hour) per annum on 08 hours single shift basis. The unit is assumed to operate 300 days per annum.

However, during 1st year operation unit will operate at 60% capacity (i.e. 259,200 tiles), while maximum capacity utilization of the unit is assumed at 90%. i.e. 388,800 tiles in 7th year of operation.

6 CRITICAL FACTORS

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

- ⇒ Background knowledge and related experience of the entrepreneur in plastic waste processing and plastic product manufacturing.
- ⇒ Selection of quality PP, LDPE & HDPE wastes 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.
- ⇒ Appropriate arrangement for transportation of plastic waste to the processing unit.
- ⇒ Business location is the key to success for the plastic waste tiles 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 resource for the handling of business operations especially in production and sales.
- ⇒ Effective marketing and distribution of the product.
- ⇒ Employ careful financial and accounting analysis to ensure efficiency and proper controls.

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

As the major customers of plastic waste tiles are hospitals, park areas and homes, so the unit can be established in any major city of Pakistan. Therefore, cities like, Karachi, Lahore, Peshawar, Quetta, Faisalabad, Gujranwala, Gujrat, Sargodha, Multan, Rawalpindi and Hyderabad can be suitable locations for setting up this unit.

Subsequently, availability of skilled labor, raw material and close customer proximity is extremely important for the success of this business. Concerning to that, the above mentioned cities are considered as the most appropriate location for the proposed venture.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

Potential target customers for the produced plastic waste tiles will mainly comprise of both business buyers (hospitals, park and play area management, mosques, gyms, etc.,) and general household consumers.

Since, majority of the target customer belongs to the business segments, therefore, above identified metropolitan cities will be the potential markets for the produced plastic waste tiles. The general household consumers will be targeted through wholesalers, while business buyers will be targeted on order manufacturing basis..

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyse the commercial viability of Plastic Waste Tiles 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 estimated sales of Rs. 31.935 million in the year one. The capacity utilization during year one is worked out at 60% with 5% increase in subsequent years up to the maximum capacity utilization of 90%.

In order to financially appraise the project, a 100% Equity Based Business Model has been assumed. The following tables show Internal Rate of Return, Payback Period Net Present Value and Breakeven of the proposed venture.

Table 1 Project Economics

Description	Details
Internal Rate of Return (IRR)	28%
Payback Period (Yrs.)	4.23
Net Present Value (Rs.)	34,052,792

Calculation of break-even analysis is as follows:

Table 2: 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	18,482,930	19,396,077	20,398,028	21,545,286	22,820,232	24,146,836	25,706,498	27,286,772	29,036,266	30,994,186
Break-Even Units	143,764	137,151	131,124	125,908	121,235	116,621	112,867	108,914	105,361	102,241
Margin of Safety	42%	51%	57%	61%	65%	68%	71%	72%	73%	74%

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 3: Project Economics Based on Debt (50%):Equity (50%)

Description	Details
Internal Rate of Return (IRR)	28%
Payback Period (Yrs.)	4.28
Net Present Value (Rs.)	57,530,459

The financial assumptions for Debt: Equity are as follows:

Table 4: Financial Assumptions for Debt:Equity Model

Description	Details
Debt (50%)	29,311,697
Equity (50%)	29,311,697
Interest Rate on Debt	12%
Debt Tenure	5
Debt Payment / Year	2

The projected Income Statement, Cash Flow Statement and Balance Sheet enclosed 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 5: Project Cost

Description	Amount Rs.
Capital Cost	
Land	7,000,000
Building / Infrastructure	20,532,500
Machinery & Equipment	24,447,684
Office Vehicles	2,525,000
Pre-operating Costs	1,412,500
Furniture & Fixtures	872,500
Wapda Security	201,000
Office Equipment	134,000
Total Capital Cost	57,125,184
Working Capital Cost	
Upfront insurance payment	674,317
Cash	405,208
Raw Material Inventory	388,125
Equipment Spare Part Inventory	30,560
Total Working Capital	1,498,210
Total Project Cost	58,623,393

9.3 Land and Building Requirement

Approximately 2.5 Kanals of land would be required for establishment of proposed unit. It is recommended that required land should be procured in the industrial estates of identified city. The cost of land is estimated at the rate of Rs. 2.8 million per kanal.

The infrastructural requirements of the project mainly comprise the construction of management building, production hall, crushing and recycling hall, packing hall and storage, etc. The cost of construction of building for the proposed unit is provided in the table below.

Table 6: Space Requirement

Description	Estimated Area (Sq. ft.)	Unit Cost (Rs.)	Total Cost (Rs.)
Management building	1,000	2,500	2,500,000
Production Hall	2,700	2,200	5,940,000
Crushing & Recycling Unit	1,350	2,200	2,970,000
Warehouse	1,350	2,200	2,970,000
Packing Hall	1,350	2,200	2,970,000
Washrooms	100	2,500	250,000
Cafeteria	675	2,500	1,687,500
Electric room	100	2,200	220,000
Pavement/driveway	900	500	450,000
Grounds	1,725	50	86,250
Boundary Wall and Gate	425	1,150	488,750
Total Construction Cost			20,532,500
Total Cost of Land			7,000,000
Total Land and Building Cost			27,532,500

9.4 Machinery & Equipment Requirement

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

Table 7: Machinery & Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Injection Machine 488 Ton	1	10,942,440	10,942,440
Plastic Recycling Unit	1	2,000,000	2,000,000
Crusher / Shredder	1	480,000	480,000
Mold Single Cavity	10	500,000	5,000,000
Hopper Dryer	1	250,000	250,000
Autoloader	1	150,000	150,000

Chiller	1	620,000	620,000
Generator	1	2,250,000	2,250,000
Transformer	1	811,000	811,000
Installation Charges 10%			1,944,244
Total			24,447,684

9.5 Furniture & Fixtures Requirement

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

Table 8: Furniture & Fixture

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Chairs for Staff and Visitors etc.	35	4,000	140,000
Tables (Reception & Other Tables)	10	6,200	62,000
Telephones	4	1,500	6,000
Industrial Fans	12	35,000	420,000
Water Dispenser	1	19,500	19,500
LED Lights	56	1,000	56,000
Air conditioners (1.5-ton window)	2	84,500	169,000
Total			872,500

9.6 Office Equipment

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

Table 9: Office Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Computers	4	25,000	100,000
Computer Printer (s)	1	29,500	29,500
Telephones	3	1,500	4,500
Total			134,000

9.7 Office vehicles Requirement

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

Table 10: Office Vehicles

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Mini Truck	1	2,525,000	2,525,000
Total			2,525,000

9.8 Raw Material Requirements

The main raw material for this proposed project is the plastic waste material. Used plastic bags, plastic films, plastic containers with the correct type of Low-Density Polyethylene (LDPE) would be required for recycling and processing into the final product of tiles. It is recommended that agreements for uninterrupted and high quality supply of these raw materials shall be made with the large waste management companies operating in the metropolitan areas in the surroundings of the proposed facility to ensure efficient operations of the business.

Following table provide the details of raw material required for first year production.

Table 11: Raw Material Requirement

Description	Total Production Capacity (Tiles)	Production Capacity Year 1 (Tiles)*	Average Cost of RM / Tile (Rs.)	Total Cost of RM Year 1 (Rs.)
Raw Material (Plastic Waste)	432,000	259,200	37.50	9,720,000

* 15 days Production (i.e 10,800 tiles) is considered as finished goods inventory.

9.9 Human Resource Requirement

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

Table 12: Human Resource Requirement

Description	No. of Employees	Monthly Salary per person (Rs.)	Total Salaries Per Month (Rs.)
Owner/Manager	1	70,000	70,000

Polymer Engineer	1	50,000	50,000
Accounts Officer	1	30,000	30,000
Plant Engineer	1	45,000	45,000
Sales Executive	1	45,000	45,000
Machine Operators	7	22,000	154,000
Guards	2	17,500	35,000
Un Skilled Labour/ Helpers	7	17,500	122,500
Loading In charge	1	20,000	20,000
Sweepers	1	17,500	17,500
Driver	1	22,000	22,000
Total	24		611,000

9.10 Utilities and Other Costs

An essential cost to be borne by the project is the cost of electricity. The electricity expenses are estimated to be around Rs.149,004 (Direct and In direct) per month. Furthermore, promotional expense being essential for marketing of rubber tiles Unit is estimated as 0.5% of revenue.

9.11 Revenue Generation

Based on the capacity utilization of 60%, sales revenue during the first year of operations is provided in the table below.

Table 13: Revenue Generation – Year 1

Description	No. of Tiles Produced (No.)	Finished Goods Inventory (No.)	Tiles Sold (No.)	Sale Price / Tile (Rs.)	Sales Revenue (Rs.)
Plastic Waste tiles	259,200	10,800	248,400	129	31,935,427

10 CONTACT DETAILS

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

Table 14: Machinery Suppliers

Name of Supplier	Address	Phone
HS Engineering	D.H.A. Main Blvd, Sector G DHA Phase 1, Lahore, Punjab	0312 4683706
M. Irfan Moulds		0322-4927264

11 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
Government of Pakistan	www.pakistan.gov.pk
Ministry of Industries & Production	www.moip.gov.pk
Government of Punjab	www.punjab.gov.pk
Government of Sindh	www.sindh.gov.pk
Government of Khyber Pakhtunkhwa	www.khyberpakhtunkhwa.gov.pk
Government of Baluchistan	www.balochistan.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Government of Azad Jammu Kashmir	www.ajk.gov.pk
Trade Development Authority of Pakistan (TDAP)	www.tdap.gov.pk
Security Commission of Pakistan (SECP)	www.secp.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
State Bank of Pakistan (SBP)	www.sbp.org.pk
Punjab Small Industries Corporation	www.psic.gop.pk
Sindh Small Industries Corporation	www.ssic.gos.pk
Pakistan Plastic Manufacturers Association (PPMA)	www.pakplas.com.pk
Punjab Industrial Estate Management and Development Company (PIEMDC)	www.pie.com.pk
Faisalabad Industrial Estate Management and Development Company (FIEMDC)	www.fiedmc.com.pk
Lahore Waste Management Company (LWMC)	www.lwmc.com.pk

Punjab Vocational Training Council (PVTC)	www.pvtc.gop.pk
Technical Education and Vocational Training Authority (TEVTA)	www.tevta.org

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	31,935,427	39,583,730	46,902,265	55,288,670	64,883,334	75,844,043	88,348,061	97,408,350	107,149,185	117,864,103
<i>Cost of sales</i>										
Raw material cost	9,315,000	11,545,875	13,680,563	16,126,729	18,925,323	22,122,368	25,769,569	28,412,295	31,253,525	34,378,877
Direct labor	2,701,350	3,348,304	3,967,363	4,676,751	5,488,344	6,415,487	7,473,175	8,239,566	9,063,522	9,969,874
Machinery maintenance	366,715	385,051	404,304	424,519	445,745	468,032	491,434	516,005	541,805	568,896
Direct electricity	1,621,334	2,009,632	2,381,188	2,806,959	3,294,072	3,850,537	4,485,356	4,945,339	5,439,873	5,983,860
Total cost of sales	14,004,400	17,288,862	20,433,417	24,034,958	28,153,482	32,856,424	38,219,534	42,113,205	46,298,725	50,901,508
Gross Profit	17,931,027	22,294,868	26,468,848	31,253,713	36,729,851	42,987,619	50,128,528	55,295,145	60,850,459	66,962,595
<i>General administration & selling expenses</i>										
Administration expense	2,634,000	2,897,400	3,187,140	3,505,854	3,856,439	4,242,083	4,666,292	5,132,921	5,646,213	6,210,834
Administration benefits expense	526,800	579,480	637,428	701,171	771,288	848,417	933,258	1,026,584	1,129,243	1,242,167
Electricity expense	166,717	183,389	201,728	221,901	244,091	268,500	295,350	324,885	357,374	393,111
Water expense	79,020	86,922	95,614	105,176	115,693	127,263	139,989	153,988	169,386	186,325
Travelling expense	131,700	144,870	159,357	175,293	192,822	212,104	233,315	256,646	282,311	310,542
Communications expense (phone, fax, mail, internet, etc.)	105,360	115,896	127,486	140,234	154,258	169,683	186,652	205,317	225,849	248,433
Office vehicles running expense	505,000	555,500	611,050	672,155	739,371	813,308	894,638	984,102	1,082,512	1,190,764
Office expenses (stationary, entertainment, janitorial services, etc)	395,100	434,610	478,071	525,878	578,466	636,313	699,944	769,938	846,932	931,625
Promotional expense Year 1-5	159,677	197,919	234,511	276,443	324,417	-	-	-	-	-
Insurance expense	674,317	600,573	526,829	453,084	379,340	407,259	325,808	244,356	162,904	81,452
Professional fees (legal, audit, consultants, etc.)	159,677	197,919	234,511	276,443	324,417	379,220	441,740	487,042	535,746	589,321
Depreciation expense	4,106,828	4,106,828	4,106,828	4,114,860	4,113,565	4,421,872	4,431,169	4,429,670	4,429,670	4,440,432
Amortization of pre-operating costs	282,500	282,500	282,500	282,500	282,500	-	-	-	-	-
Bad debt expense	319,354	395,837	469,023	552,887	648,833	758,440	883,481	974,083	1,071,492	1,178,641
Miscellaneous expense 1	131,700	144,870	159,357	175,293	192,822	212,104	233,315	256,646	282,311	310,542
Subtotal	10,377,751	10,924,513	11,511,433	12,179,171	12,918,321	13,686,177	14,585,819	15,489,699	16,489,814	17,608,849
Operating Income	7,553,276	11,370,355	14,957,415	19,074,542	23,811,531	29,301,443	35,542,708	39,805,446	44,360,645	49,353,747
Other income (interest on cash)	121,838	392,633	738,690	1,150,555	1,597,497	2,132,032	2,814,630	3,596,096	4,461,440	5,451,236
Gain / (loss) on sale of computer equipment	-	-	32,375	-	-	69,853	-	-	113,239	90,404
Gain / (loss) on sale of office vehicles	-	-	-	-	1,010,000	-	-	-	-	-
Earnings Before Interest & Taxes	7,675,113	11,762,988	15,728,480	20,225,097	26,419,028	31,503,327	38,357,338	43,401,542	48,935,323	54,895,386
Earnings Before Tax	7,675,113	11,762,988	15,728,480	20,225,097	26,419,028	31,503,327	38,357,338	43,401,542	48,935,323	54,895,386
Tax	1,806,289	3,237,045	4,624,968	6,198,784	8,366,659	10,146,164	12,545,068	14,310,539	16,247,363	18,333,385
NET PROFIT/(LOSS) AFTER TAX	5,868,824	8,525,942	11,103,513	14,026,313	18,052,369	21,357,163	25,812,270	29,091,002	32,687,961	36,562,002

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
Assets											
<i>Current assets</i>											
Cash & Bank	405,208	9,341,798	22,068,825	37,026,409	55,018,014	72,781,773	97,780,768	127,389,607	160,298,054	196,617,113	239,481,770
Accounts receivable		1,312,415	1,469,572	1,777,109	2,099,814	2,469,288	2,891,658	3,373,810	3,816,913	4,203,237	4,623,561
Finished goods inventory		608,887	722,686	853,934	1,004,246	1,176,125	1,372,381	1,596,175	1,754,717	1,929,114	2,120,896
Equipment spare part inventory	30,560	33,692	37,145	40,953	45,150	49,778	54,881	60,506	66,708	73,545	-
Raw material inventory	388,125	505,132	628,451	777,863	958,494	1,176,432	1,438,904	1,665,790	1,923,987	2,222,205	-
Pre-paid insurance	674,317	600,573	526,829	453,084	379,340	407,259	325,808	244,356	162,904	81,452	-
Total Current Assets	1,498,209	12,402,496	25,453,507	40,929,352	59,505,058	78,060,656	103,864,399	134,330,244	168,023,283	205,126,666	246,226,226
<i>Fixed assets</i>											
Land	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000
Building/Infrastructure	20,532,500	19,505,875	18,479,250	17,452,625	16,426,000	15,399,375	14,372,750	13,346,125	12,319,500	11,292,875	10,266,250
Wapda 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	24,447,684	22,002,916	19,558,147	17,113,379	14,668,610	12,223,842	9,779,074	7,334,305	4,889,537	2,444,768	-
Furniture & fixtures	872,500	785,250	698,000	610,750	523,500	436,250	349,000	261,750	174,500	87,250	-
Office vehicles	2,525,000	2,020,000	1,515,000	1,010,000	505,000	4,066,538	3,253,230	2,439,923	1,626,615	813,308	-
Computer equipment	129,500	86,765	44,030	151,207	100,441	50,970	175,042	116,273	59,004	202,632	134,601
Office equipment	4,500	4,050	3,600	3,150	2,700	2,250	1,800	1,350	900	450	-
Total Fixed Assets	55,712,684	51,605,856	47,499,027	43,542,111	39,427,252	39,380,225	35,131,895	30,700,726	26,271,056	22,042,283	17,601,851
<i>Intangible assets</i>											
Pre-operation costs	1,412,500	1,130,000	847,500	565,000	282,500	-	-	-	-	-	-
Total Intangible Assets	1,412,500	1,130,000	847,500	565,000	282,500	-	-	-	-	-	-
TOTAL ASSETS	58,623,393	65,138,352	73,800,034	85,036,463	99,214,810	117,440,881	138,996,295	165,030,970	194,294,339	227,168,950	263,828,077
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable		646,135	781,875	914,791	1,066,825	1,240,527	1,438,778	1,661,183	1,833,549	2,020,200	2,117,326
Total Current Liabilities	-	646,135	781,875	914,791	1,066,825	1,240,527	1,438,778	1,661,183	1,833,549	2,020,200	2,117,326
<i>Shareholders' equity</i>											
Paid-up capital	58,623,393	58,623,393	58,623,393	58,623,393	58,623,393	58,623,393	58,623,393	58,623,393	58,623,393	58,623,393	58,623,393
Retained earnings		5,868,824	14,394,766	25,498,279	39,524,592	57,576,961	78,934,124	104,746,394	133,837,396	166,525,357	203,087,358
Total Equity	58,623,393	64,492,217	73,018,160	84,121,672	98,147,985	116,200,354	137,557,517	163,369,787	192,460,790	225,148,750	261,710,752
TOTAL CAPITAL AND LIABILITIES	58,623,393	65,138,352	73,800,034	85,036,463	99,214,810	117,440,881	138,996,295	165,030,970	194,294,339	227,168,950	263,828,077

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		5,868,824	8,525,942	11,103,513	14,026,313	18,052,369	21,357,163	25,812,270	29,091,002	32,687,961	36,562,002
Add: depreciation expense		4,106,828	4,106,828	4,106,828	4,114,860	4,113,565	4,421,872	4,431,169	4,429,670	4,429,670	4,440,432
amortization of pre-operating costs		282,500	282,500	282,500	282,500	282,500	-	-	-	-	-
Accounts receivable		(1,312,415)	(157,157)	(307,538)	(322,704)	(369,474)	(422,371)	(482,152)	(443,102)	(386,324)	(420,324)
Finished goods inventory		(608,887)	(113,799)	(131,248)	(150,312)	(171,878)	(196,257)	(223,794)	(158,541)	(174,397)	(191,783)
Equipment inventory	(30,560)	(3,132)	(3,453)	(3,807)	(4,198)	(4,628)	(5,102)	(5,625)	(6,202)	(6,838)	73,545
Raw material inventory	(388,125)	(117,007)	(123,319)	(149,412)	(180,631)	(217,938)	(262,472)	(226,886)	(258,197)	(298,218)	2,222,205
Advance insurance premium	(674,317)	73,744	73,744	73,744	73,744	(27,919)	81,452	81,452	81,452	81,452	81,452
Accounts payable		646,135	135,740	132,916	152,034	173,702	198,251	222,405	172,367	186,650	97,126
Other liabilities		-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(1,093,002)	8,936,590	12,727,027	15,107,496	17,991,605	21,830,297	25,172,537	29,608,839	32,908,448	36,519,956	42,864,656
<i>Financing activities</i>											
Issuance of shares	58,623,393	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	58,623,393	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(57,125,184)	-	-	(149,912)	-	(4,066,538)	(173,542)	-	-	(200,897)	-
Cash (used for) / provided by investing activities	(57,125,184)	-	-	(149,912)	-	(4,066,538)	(173,542)	-	-	(200,897)	-
NET CASH	405,208	8,936,590	12,727,027	14,957,584	17,991,605	17,763,759	24,998,994	29,608,839	32,908,448	36,319,059	42,864,656

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Details
Travelling expense	5% of administration expense
Communication Expenses	4% of administration expense
Promotional Expenses	0.5% of Revenue (Year 1 – Year 5) 0.25% of Revenue (Year 6 – Year 10)
Depreciation Method	Straight Line
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%

13.2 Production Cost Assumptions

Description	Details
Maximum Operational Capacity in Kgs / Tiles	432,000
Production Capacity in First Year	60%
Percentage Increase in Production Capacity every Year	5%
Maximum Production Capacity	90%
Finish good Inventory	15 Days

13.3 Revenue Assumptions

Description	Details
Sale Price Growth Rate	10%
Hours Operational / Day	8
Shift Length (Hours)	8
Days Operational / Year	300