



Pre-feasibility Study

GEMSTONE LAPIDARY

January 2021

“The figures and financial projections are approximate due to fluctuations in exchange rates, energy costs, and fuel prices etc. Users are advised to focus on understanding essential elements such as production processes and capacities, space, machinery, human resources, and raw material etc. requirements. Project investment, operating costs, and revenues can change daily. For accurate financial calculations, utilize financial calculators on SMEDA's website and consult financial experts to stay current with market conditions.”

Small and Medium Enterprises Development Authority
Ministry of Industries and Production
Government of Pakistan

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1 DISCLAIMER

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2 EXECUTIVE SUMMARY

Pakistan is fortunate enough to have large deposits of gemstone variety, including some highly priced and demanded ones like Emerald, Topaz, Ruby and Aquamarine Stones. However, there is lack of modern processing facilities for gemstones in the country.

This pre-feasibility study provides the basic information for setting up a 'Gemstone Lapidary' unit. The 'Gemstone Lapidary' business is basically relating to the engraving, cutting, or polishing of stones and gems on commercial basis upstream Gold Jewelers, Gemstone Traders / Exporters and Customers. The Lahore, Karachi, Islamabad and Peshawar are the major centers of Gold Jewelry and Gemstone Studded Jewelry making in Pakistan. Additionally, traditional jewelry making is quite common in all major cities across Pakistan. The major mines of Gemstones are in Chitral, Mardan, Gilgit Baltistan and Neelum Valley Muzaffarabad etc.

The proposed 'Gemstone Lapidary Unit' will comprise of the latest, grinding, engraving, cutting and polishing facilities for different type of gemstones. Total production capacity for processing of gemstones will be 4,800 stones per year, whereas the initial production capacity for the first year of operations will be 70% (i.e. 3,360 stones) with an increase of 5% in subsequent years. The commercial viability of this Gemstone Lapidary depends primarily on the regular orders from the customers and proximity to gemstone cluster.

The total project cost for setting up this business is estimated at Rs. 3.457 million out of which Rs. 3.083 million is capital cost and Rs. 0.374 million is working capital. The project is proposed to be financed through 100% equity. The NPV is projected around Rs. 5.079 million, with an IRR of 36% and a Payback Period of 3.96 years. The project will provide employment opportunities to 14 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 “**Gemstone Lapidary**” 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

Gems and Jewelry is an emerging sector of Pakistan with an immense local and export potentials. There is a large variety in gemstone deposits of Pakistan including Emeralds of Mingora, Gujar Killi and Shamozaï, Pink and Golden Topaz of Mardan and Aquamarine of Chitral and Neelam Valley and Peridot of Dassu, which are well known for their color and clarity. Pakistan's Pink Topaz and Kashmir Ruby, are unique items all over the world, especially the Pink Topaz was considered as one of the second highest valued mineral. Most of the exports are in form of rough stones, mainly because of lack of sophisticated processing industry in the country.

Therefore, establishment of lapidary for engraving, cutting and polishing of precious gemstones could not facilitate the locally jewelry making industry as well as leads

to increase the exports. This proposed unit with modern processing machines is an addition to gems processing industry where dozens of small players are involved in cutting and polishing by simple and unsophisticated tools which are not preferred by many jewelers, traders and exporters of gems. The proposed project aims at filling this gap of value adding facilities in the gems industry. It will be equipped with modern processing machines include faceting, cutting and polishing to produce precious and semi-precious gem stones of both calibrated and non-calibrated types.

The unit will provide processing services on commercial basis to Jewelry Manufacturers, Commercial Traders / Exporters as well as to general Customers. The processing services for different types of stones i.e. Jewelry Stone, Tableware /Decorative Stones, Polishing of Stones, Beads and Precious Stones. An enormous export market for the Pakistani gemstones exists in Europe, USA, Middle East, Hong Kong, Taiwan, etc. It is expected that the gemstone lapidary market will continue to grow in the coming period. The legal status of proposed units is assumed to be 'Sole Proprietorship'.

5.1 Production Process Flow

The process of Lapidary includes grading, cutting and polishing of gemstones. Raw stones are either purchased from the market or collected from the customers. Individual stone is then examined (graded) and cut into smaller stones along its major line of fracture and inclusions. The smaller pieces are then mounted on cutting tools, which are then faceted on faceting machines. The final operation involves polishing of the faceted stones. Polished stones are then delivered to the customers or sold to the market.

Figure 1: Process Flow Diagram



5.2 Installed and Operational Capacities

The pre-feasibility study is based on processing of 4,800 gemstones units annually. The initial operational capacity of the project will be 70% with an annual growth of 5%. Maximum capacity utilization of the project is assumed at 100%.

Table 1: Installed and Operational Capacity

Description of Product Mix	Production Percentage	Total Installed Capacity (No of Pieces)	Operational Capacity 70% Year 1 (No of Pieces)
Beads	50%	2,400	1,680
Gemstone Customers (For Polishing etc.)	18.75%	900	630
Gemstone	18.75%	900	630
Tableware & Decoration Items	12.5%	600	420
Total	100%	4,800	3,360

6 CRITICAL FACTORS

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

- ⇒ Awareness about current market trends i.e. the type of popular stone and type of cuts required by the customers.
- ⇒ Availability of skilled labour.
- ⇒ Regular upgradation in gemstone identification.
- ⇒ Reliability and contacts with the traders
- ⇒ Timely delivery of orders.
- ⇒ Reasonable & competitive prices with respect to brand positioning.
- ⇒ Availability of raw material (rough, uncut and unpolished gemstones)
- ⇒ Proximity to the Gem cluster

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The most appropriate location for setting up a Gemstone lapidary would be Peshawar since major trade/export is taking place in this city. Within Peshawar, Namak Mandi area is preferable as large Gemstone Cluster exists here. Similarly,

Lahore & Karachi with its large Gold and Gem studded jewelry making industry are other suitable locations. Chitral and Mingora as well as Gilgit and Skardu are also suitable locations for establishment of Gems Lapidary due to proximity of raw material sources.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

Initially the products, mainly semi-precious nature gemstones will be processed by focusing on demand of the jewelry manufactures of Karachi, Lahore and Peshawar. After having reasonable domestic customers base, export market can be targeted provided exports standards are met. The main export markets for Pakistani Gemstone are U.A.E, United Kingdom, Thailand, Canada, Italy, China, Netherlands, Saudi Arabia, USA, Hong Kong and Germany.

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of “Gemstone Lapidary”. Various costs 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 also attached as annexure.

9.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of Rs. 7.161 million in the year one. The capacity utilization during year one is worked out at 70% with 5% increase in subsequent years up to the maximum capacity utilization of 100%.

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

Table 2: Project Economics

Description	Details
Internal Rate of Return (IRR)	36%
Payback Period (Yrs.)	3.96
Net Present Value (Rs.)	5,078,803

Calculation of break-even analysis is as follows:

Table 3: 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	7,375,973	7,460,854	7,657,215	7,951,894	8,320,363	9,114,358	9,605,834	10,442,888	11,364,615	12,386,012
Break-Even Units	3,461	3,182	2,969	2,803	2,666	2,655	2,544	2,514	2,488	2,465
Margin of Safety	-3%	12%	23%	31%	38%	42%	47%	48%	48%	49%

However, for the purposes of further explanation the Project Economics based on Debt: Equity (i.e. 50:50) Model has also been computed. On the basis of 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 4: Project Economics Based on Debt (50%) : Equity (50%)

Description	Details
Internal Rate of Return (IRR)	32%
Payback Period (Yrs.)	5.23
Net Present Value (Rs.)	6,877,642

The financial assumptions for Debt:Equity are as follows:

Table 5: Financial Assumptions for Debt:Equity Model

Description	Details
Debt	50%
Equity	50%
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 6: Project Cost

Description	Amount Rs.
Capital Cost	
Plant and Machinery	1,995,000
Furniture & Fixture	900,900
Building Security	75,000
Pre-operating Cost	67,500
Computer Equipment	45,000
Total Capital Cost	3,083,400
Working Capital	
Raw Material Inventory	272,825
Cash	75,000
Up-front Building Rent	25,000
Equipment spare part inventory	831
Total Working Capital	373,656
Total Project Cost	3,457,056

9.3 Space Requirement

An estimated covered area of 2,250 sq. ft. will be required for the proposed “**Gemstones Lapidary**”. The space requirement is estimated considering various facilities including management office, production hall, storage, washroom, etc. Details of space requirement is given below.

Table 7: Space Requirement

Description	Area Required Sq. Ft.
Management Office	600
Cutting & Polishing	1,000
Storage Room	450

Wash Rooms	200
Total	2,250

In order to reduce the initial capital cost, the proposed unit will be established in a rental premise. In this regard space may be acquired nearby to gems and jewelry industrial clusters. The estimated rent of the required space is assumed at Rs. 25,000 per month with a security deposit of Rs. 75,000.

9.4 Machinery & Equipment Requirement

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

Table 8: Machinery & Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Calibrating Machine	2	250,000	500,000
Dual Edge Grinding	2	150,000	300,000
Polishing & Buffing	4	65,000	260,000
Factor	2	125,000	250,000
Trim Saw	2	25,000	50,000
Generator 10 KVA	1	635,000	635,000
Total			1,995,000

9.5 Furniture & Fixtures Requirement

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

Table 9: Furniture & Fixture

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Chairs for Staff & Visitors	14	3,500	49,000
Tables	2	6,200	12,400
Fans	10	20,000	200,000
Telephones	1	1,500	1,500
LED Lights	20	1,000	20,000
Initial Renovation Cost	1	400,000	400,000
Electric Wiring & Lighting	1	50,000	50,000
Air Conditioners (1.5 ton)	2	84,000	168,000

Total			900,900
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9.6 Office Equipment Requirement

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

Table 10: Office Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Computers	1	25,000	25,000
Computer printer (s)	1	20,000	20,000
Total			45,000

9.7 Raw Material Requirement

Detail of Raw material of gemstone lapidary are given below.

Table 11: Raw Material Requirements

Description	Percentage	Capacity	Year 1 (No. of Pieces)
Table ware & Decoration	12.5%	600	420
Beads	50%	2400	1,680
Gemstone Customers (For polishing etc.)	18.75%	900	630
Gemstone	18.75%	900	630
CGS Raw Material Per unit			PKR
Table ware & Decoration			250
Beads			340
Gemstone Customers (For polishing etc.)			25
Gemstone			1,500
CGS Raw Material for First Year			PKR
Table ware & Decoration			105,000
Beads			571,200
Gemstone Customers (For polishing etc.)			15,750
Gemstone			945,000

Total CGS			1,636,950
Weighted Avg. CGS per unit			487.188

9.8 Human Resource Requirement

In order to run operations of “**Gemstones Lapidary**” 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.)
Accounts & Admin Manager	1	40,000
CEO/Manager	1	50,000
Trim Saw Operator	2	22,000
Factory Operator	2	22,000
Calibrating Machine Operator	2	22,000
Dual Edge Grinding Operator	2	22,000
Polishing & Buffing Operator	2	22,000
Security Guards	1	17,500
Office Boys	1	17,500
Total	14	

9.9 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.37,431 (Direct & In-direct) per month. Furthermore, promotional expense being essential for marketing of gemstone lapidary Unit is estimated as 0.5% of revenue.

9.10 Revenue Generation

Based on the capacity utilization of 70%, sales revenue during the first year of operations is provided in the table below.

Table 13: Revenue Generation – Year 1

Description	No. of Units Produced (No.)	Sale Price (Rs.)	Revenue (Rs.)
Beads	1,680	1,200	2,016,000
Gemstone Customers (For Polishing etc.)	630	3,000	1,890,000
Gemstone	630	4,500	2,835,000
Tableware & Decoration Items	420	1,000	420,000
Total	3,360		7,161,000

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: Technical Experts

Name of Supplier	Address	Phone
All Pakistan Gems & Minerals Company	Diamond Tower Building, Shah Qabool Namak Mandi, Peshawar, Khyber Pakhtunkhwa	0300 9597571
Mahtab Khan Afridi	Peshawar PCSIR Labs	0345-9112690

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 Horticulture Development and Export Company (PHDEC)	www.phdec.org.pk
Punjab Vocational Training Council (PVTC)	www.pvtc.gop.pk
Technical Education and Vocational Training Authority (TEVTA)	www.tevta.org
Pakistan Gems Jewellery Traders and Exporters Association	www.pgjtea.org
Pakistan Gems & Jewellery Development Company (PGJDC)	www.pgjdc.org.pk

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	7,161,000	8,439,750	9,902,640	11,573,711	13,479,969	15,651,741	18,123,069	19,935,376	21,928,914	24,121,805
<i>Cost of sales</i>										
Cost of goods sold 1	1,636,950	1,929,263	2,263,668	2,645,662	3,081,418	3,577,869	4,142,795	4,557,075	5,012,782	5,514,061
Direct labor	2,640,000	2,904,000	3,194,400	3,513,840	3,865,224	4,251,746	4,676,921	5,144,613	5,659,074	6,224,982
Machinery maintenance	39,900	41,895	43,990	46,189	48,499	50,924	53,470	56,143	58,950	61,898
Direct electricity	274,995	302,494	332,744	366,018	402,620	442,882	487,170	535,887	589,475	648,423
Total cost of sales	4,591,845	5,177,652	5,834,801	6,571,709	7,397,760	8,323,420	9,360,356	10,293,718	11,320,283	12,449,364
Gross Profit	2,569,155	3,262,098	4,067,839	5,002,001	6,082,208	7,328,321	8,762,713	9,641,658	10,608,631	11,672,441
<i>General administration & selling expenses</i>										
Administration expense	1,500,000	1,650,000	1,815,000	1,996,500	2,196,150	2,415,765	2,657,342	2,923,076	3,215,383	3,536,922
Building rental expense	300,000	330,000	363,000	399,300	439,230	483,153	531,468	584,615	643,076	707,384
Electricity expense	174,182	191,601	210,761	231,837	255,020	280,522	308,575	339,432	373,375	410,713
Water expense	20,049	21,052	22,104	23,209	24,370	25,588	26,868	28,211	29,622	31,103
Travelling expense	37,500	41,250	45,375	49,913	54,904	60,394	66,434	73,077	80,385	88,423
Communications expense (phone, fax, mail, internet, etc.)	30,000	33,000	36,300	39,930	43,923	48,315	53,147	58,462	64,308	70,738
Office expenses (stationary, entertainment, janitorial services, etc)	45,000	49,500	54,450	59,895	65,885	72,473	79,720	87,692	96,461	106,108
Promotional expense Year 1-5	35,805	42,199	49,513	57,869	67,400	-	-	-	-	-
Promotional expense Year 6-10	-	-	-	-	-	15,652	18,123	19,935	21,929	24,122
Professional fees (legal, audit, consultants, etc.)	35,805	42,199	49,513	57,869	67,400	78,259	90,615	99,677	109,645	120,609
Depreciation expense	304,440	304,440	304,440	307,231	306,781	561,399	564,630	564,109	564,109	567,848
Amortization of pre-operating costs	13,500	13,500	13,500	13,500	13,500	-	-	-	-	-
Miscellaneous expense 1	150,000	165,000	181,500	199,650	219,615	241,577	265,734	292,308	321,538	353,692
Subtotal	2,646,281	2,883,739	3,145,456	3,436,701	3,754,177	4,283,097	4,662,654	5,070,593	5,519,830	6,017,661
Operating Income	(77,126)	378,359	922,383	1,565,300	2,328,032	3,045,224	4,100,059	4,571,065	5,088,800	5,654,780
Other income (interest on cash)	3,662	13,389	34,713	69,099	95,141	138,784	227,239	331,750	445,938	592,085
Gain / (loss) on sale of machinery & equipment	-	-	-	-	798,000	-	-	-	-	-
Gain / (loss) on sale of computer equipment	-	-	11,250	-	-	24,273	-	-	39,349	31,414
Earnings Before Interest & Taxes	(73,464)	391,748	968,346	1,634,399	3,221,173	3,208,281	4,327,298	4,902,815	5,574,088	6,278,279
Earnings Before Tax	(73,464)	391,748	968,346	1,634,399	3,221,173	3,208,281	4,327,298	4,902,815	5,574,088	6,278,279
Tax	-	-	46,835	135,160	425,293	422,070	718,189	890,844	1,092,226	1,317,397
NET PROFIT/(LOSS) AFTER TAX	(73,464)	391,748	921,511	1,499,239	2,795,879	2,786,211	3,609,108	4,011,970	4,481,861	4,960,882

12.2 Balance Sheet

Calculations											SMEDA
Balance Sheet											
Assets	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Current assets</i>											
Cash & Bank	75,000	217,926	853,214	1,923,829	3,604,084	4,007,184	7,095,515	11,083,619	15,456,346	20,218,696	27,148,094
Accounts receivable		294,288	320,563	376,898	441,295	514,802	598,597	694,003	782,023	860,225	946,248
Equipment spare part inventory	831	916	1,010	1,114	1,228	1,354	1,493	1,646	1,815	2,001	-
Raw material inventory	272,825	337,621	415,949	510,447	624,247	761,061	925,290	1,068,710	1,234,360	1,425,686	-
Pre-paid building rent	25,000	27,500	30,250	33,275	36,602	40,263	44,289	48,718	53,590	58,949	-
Total Current Assets	373,656	878,251	1,620,987	2,845,564	4,707,457	5,324,664	8,665,184	12,896,696	17,528,134	22,565,557	28,094,342
<i>Fixed assets</i>											
Building Security	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000
Machinery & equipment	1,995,000	1,795,500	1,596,000	1,396,500	1,197,000	3,543,682	3,089,564	2,635,445	2,181,327	1,727,209	1,273,091
Furniture & fixtures	900,900	810,810	720,720	630,630	540,540	450,450	360,360	270,270	180,180	90,090	-
Computer equipment	45,000	30,150	15,300	52,543	34,902	17,712	60,825	40,404	20,503	70,413	46,773
Total Fixed Assets	3,015,900	2,711,460	2,407,020	2,154,673	1,847,442	4,086,843	3,585,749	3,021,119	2,457,011	1,962,712	1,394,863
<i>Intangible assets</i>											
Pre-operation costs	67,500	54,000	40,500	27,000	13,500	-	-	-	-	-	-
Total Intangible Assets	67,500	54,000	40,500	27,000	13,500	-	-	-	-	-	-
TOTAL ASSETS	3,457,056	3,643,711	4,068,507	5,027,237	6,568,399	9,411,507	12,250,932	15,917,815	19,985,144	24,528,269	29,489,205
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable		260,119	293,166	330,385	372,308	419,537	472,751	530,526	585,884	647,147	647,202
Total Current Liabilities	-	260,119	293,166	330,385	372,308	419,537	472,751	530,526	585,884	647,147	647,202
<i>Shareholders' equity</i>											
Paid-up capital	3,457,056	3,457,056	3,457,056	3,457,056	3,457,056	3,457,056	3,457,056	3,457,056	3,457,056	3,457,056	3,457,056
Retained earnings		(73,464)	318,284	1,239,795	2,739,035	5,534,914	8,321,125	11,930,234	15,942,204	20,424,065	25,384,947
Total Equity	3,457,056	3,383,592	3,775,340	4,696,851	6,196,091	8,991,970	11,778,181	15,387,290	19,399,260	23,881,121	28,842,003
TOTAL CAPITAL AND LIABILITIES	3,457,056	3,643,711	4,068,507	5,027,237	6,568,399	9,411,507	12,250,932	15,917,815	19,985,144	24,528,269	29,489,205

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		(73,464)	391,748	921,511	1,499,239	2,795,879	2,786,211	3,609,108	4,011,970	4,481,861	4,960,882
Add: depreciation expense		304,440	304,440	304,440	307,231	306,781	561,399	564,630	564,109	564,109	567,848
amortization of pre-operating costs		13,500	13,500	13,500	13,500	13,500	-	-	-	-	-
Accounts receivable		(294,288)	(26,276)	(56,335)	(64,396)	(73,507)	(83,795)	(95,406)	(88,020)	(78,202)	(86,023)
Equipment inventory	(831)	(85)	(94)	(104)	(114)	(126)	(139)	(153)	(169)	(186)	2,001
Raw material inventory	(272,825)	(64,796)	(78,328)	(94,498)	(113,800)	(136,814)	(164,229)	(143,420)	(165,650)	(191,326)	1,425,686
Pre-paid building rent	(25,000)	(2,500)	(2,750)	(3,025)	(3,327)	(3,660)	(4,026)	(4,429)	(4,872)	(5,359)	58,949
Accounts payable		260,119	33,047	37,219	41,923	47,228	53,214	57,775	55,358	61,263	54
Cash provided by operations	(298,656)	142,926	635,288	1,122,708	1,680,255	2,949,282	3,148,635	3,988,104	4,372,727	4,832,160	6,929,398
<i>Financing activities</i>											
Issuance of shares	3,457,056	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	3,457,056	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(3,083,400)	-	-	(52,093)	-	(2,546,182)	(60,304)	-	-	(69,810)	-
Cash (used for) / provided by investing activities	(3,083,400)	-	-	(52,093)	-	(2,546,182)	(60,304)	-	-	(69,810)	-
NET CASH	75,000	142,926	635,288	1,070,615	1,680,255	403,100	3,088,331	3,988,104	4,372,727	4,762,350	6,929,398

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Details
Communication Expenses	2% of Administration Expenses
Promotional Expenses	0.5% of Revenue
Depreciation Method	Straight Line
Depreciation Rate	10% on Machinery 33% on Office Equipment 10% on Furniture & Fixture
Inflation Growth Rate	10%
Electricity Price Growth Rate	10%
Salaries Growth Rate	10%
Water Price Growth Rate	5%
Gas Price Growth Rate	5%
Wage Growth Rate	10%

13.2 Production Cost Assumptions

Description	Details
Maximum Operational Capacity	4,800
Production Capacity in First Year	70%
Percentage Increase in Production Capacity (Annual)	5%
Maximum Production Capacity	100%

13.3 Revenue Assumptions

Description	Details
Sale Price Growth Rate	10%
Capacity Utilization	70%
Capacity Utilization Growth Rate	5%