



**Pre-feasibility Study**

# **MICA PROCESSING UNIT**

**February 2020**

*“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

## Table of Contents

<b>1</b>	<b>DISCLAIMER .....</b>	<b>3</b>
<b>2</b>	<b>EXECUTIVE SUMMARY.....</b>	<b>4</b>
<b>3</b>	<b>INTRODUCTION TO SMEDA.....</b>	<b>5</b>
<b>4</b>	<b>PURPOSE OF THE DOCUMENT.....</b>	<b>5</b>
<b>5</b>	<b>BRIEF DESCRIPTION OF PROJECT &amp; PRODUCT .....</b>	<b>6</b>
5.1	PRODUCTION PROCESS FLOW .....	9
5.2	INSTALLED AND OPERATIONAL CAPACITIES.....	9
<b>6</b>	<b>CRITICAL FACTORS .....</b>	<b>9</b>
<b>7</b>	<b>GEOGRAPHICAL POTENTIAL FOR INVESTMENT .....</b>	<b>10</b>
<b>8</b>	<b>POTENTIAL TARGET CUSTOMERS / MARKETS .....</b>	<b>10</b>
<b>9</b>	<b>PROJECT COST SUMMARY .....</b>	<b>10</b>
9.1	PROJECT ECONOMICS.....	10
9.2	PROJECT FINANCING.....	10
9.3	PROJECT COST .....	11
9.4	SPACE REQUIREMENT.....	12
9.5	MACHINERY & EQUIPMENT REQUIREMENT .....	12
9.6	FURNITURE & FIXTURES REQUIREMENT.....	13
9.7	OFFICE EQUIPMENT REQUIREMENT.....	13
9.8	HUMAN RESOURCE REQUIREMENT.....	14
9.9	UTILITIES AND OTHER COSTS.....	14
9.10	REVENUE GENERATION.....	14
<b>10</b>	<b>CONTACT DETAILS .....</b>	<b>16</b>
10.1	MACHINERY SUPPLIERS.....	16
10.2	RAW MATERIAL SUPPLIERS.....	16
10.3	TECHNICAL EXPERTS / CONSULTANTS.....	16
<b>11</b>	<b>USEFUL WEB LINKS.....</b>	<b>17</b>
<b>12</b>	<b>ANNEXURES.....</b>	<b>18</b>
12.1	INCOME STATEMENT .....	18
12.2	BALANCE SHEET .....	19
12.3	CASH FLOW STATEMENT.....	20
<b>13</b>	<b>KEY ASSUMPTIONS.....</b>	<b>21</b>
13.1	OPERATING ASSUMPTIONS.....	21
13.2	PRODUCTION ASSUMPTIONS .....	21
13.3	ECONOMY RELATED ASSUMPTIONS.....	21
13.4	CASH FLOW ASSUMPTIONS.....	21

## 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.

For more information on services offered by SMEDA, please contact our website: [www.smeda.org.pk](http://www.smeda.org.pk)

### ***Document Control***

Document No.	PREF-NO
Revision	No.
Prepared by	SMEDA-Balochistan
Revision Date	NA
For information	shakoor@smedaorg.pk

## 2 EXECUTIVE SUMMARY

**Mica Processing Unit** is proposed to be located at Quetta, Zhob, Gilgit, Chitral, Peshawar, Lahore, Faisalabad, Lasbela, Hub, Khuzdar, Kohat, Chaghi, etc.

Product include **Mica Powder for Industrial and Commercial Use**

Capacity; Installed capacity **12,000 Tons** and initial utilization **7,200 Tons, 75%**

Total Cost Estimates is **Rs. 50,095,722 with** fixed investment **Rs. 46,919,847** and working capital **Rs. 3,175,875.**

Given the cost assumptions IRR and payback are **35 %** and **3.63 years** respectively

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

- Most significant consideration
  - Recognizable deposits of Mica in the country.
  - Availability of large variety of Mica mix.
  - Availability of hard working & low-cost labor.
  - Increasing inland trends towards use of Mica Powder.
  - Large and established world markets.
  - Improved technological changes available.
- Equally important factor
  - Emphasizing on excellent services to its customers such as standardized products and timely order fulfillment.
  - New machinery should be purchased in order to increase the efficiency and lower the maintenance cost.
  - Refurbished standardized machinery is also recommended.
  - Adapt to the rapid, social, economic and technological changes.
  - Hiring of well-trained / experienced staff will add in the efficiency of the facility.

### 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 **Mica Processing 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

This project envisages production of Mica Powder which is having a very bright prospect in industrial use, Electrical Components, Capacitors and Resistors, Fire Protection, Heat Shields, Lift Door Insulation, Microporous Fire Door Insulation, Mica components including gaskets and washers, Flame retardant barriers, Battery thermal management solutions, thermal runaway barriers, Mica Automotive Components, Heat shields for ducts and thrust reversers, Aircraft exteriors and interiors, Insulation for flight recorders, Battery insulation, The manufacture of components, Heat Shields and Aircraft Construction.

Mica is widely distributed and occurs in igneous, metamorphic and sedimentary regimes. Mica group represents 34 phyllosilicate minerals that exhibits a layered or platy structure. Commercially important mica minerals are muscovite (potash or white mica) and phlogopite (magnesium or amber mica). Granitic pegmatites are the source of muscovite sheet, while phlogopite is found in areas of metamorphosed sedimentary rocks into which pegmatite rich granite rocks have been intruded. It possesses highly perfect basal cleavage due to which it can easily and accurately split into very thin sheets or films of any specified thickness. It has a unique combination of elasticity, toughness, flexibility and transparency. It possesses resistance to heat and sudden change in temperature and high dielectric strength. It is chemically inert, stable and does not absorb water.

It provides for the sparkling effect of car's bodyworks. Moreover, it is a regular ingredient in cosmetics for nails, eyes, lips and faces.

Micas are a group of chemically complex rock-forming minerals recognizable by a perfect cleavage (i.e. they are naturally flaky). Sheet mica is used predominantly in electrical insulation and ground mica has a very wide variety of uses including filler, dusting agent, absorbent, fire insulator, strength enhancer in plastics and decorative material.

As domestic consumption is limited, mica industry will be dependent largely on the global export market. Most of the mica used for electrical applications is produced by India, Canada, Zimbabwe, Australia, South Africa, the United States, Madagascar, Argentina, Brazil, Norway, Korea and Guatemala.

Mica is named after its ability to reflect and refract light. Mica has a crystalline and layered structure and can be split into very thin sheets.

### 5.1 Properties of Mica

- i. **Thermal Properties:** mica is highly infusible, only melting at a very high temperature, and as such can be used for many common purposes.

Muscovite mica is extremely heat resistant, withstanding very high temperatures, and even at red heat temperatures doesn't undergo any typical or chemical changes.

- ii. **Dielectric Property:** with a high power factor, mica experiences extremely low power loss making it a perfect dielectric for condenser manufacturing. Condensers store electrostatic energy, momentarily, in a dielectric field (for about one-millionth of a second) and then redeliver it with the minimum possible energy loss. Better quality mica exhibits more efficient power factors, and sells at a significantly higher price.

There are ten different ways people are engaged in the mica industry:

- Miners who mine crude mica and sell it to local buyers after semi-processing;
- Local buyers who sell to dealers after further processing;
- Manufacturing exporters representing small-scale factories;
- Manufacturing exporters representing large-scale factories;
- Merchant exporters sub-contracted by unregistered workshops for processing and export of finished products;
- Dealers and local suppliers who purchase illegally mined crude mica and sell it in local markets after semi processing;
- Unregistered workshops producing semi-processed and fully-processed mica;
- Home-based laborers contracted to split mica;
- Agents;
- Retailers.

These divisions, however, are not mutually exclusive. For example, a manufacturing exporter can also be a dealer as well. Also, enterprises may have more than one production unit, for example, comprising of a large-scale factory, small-scale factory and unregistered workshops.

The production process is organized in the following way:

- a) Semi-processed mica is first purchased from the mica mines and the local market. Semi-processing means cutting or 'splitting' mined crude mica into six-inch sized chunks, using hammers, knives, sickles, shears, and fingers, and separating the stained and unstained pieces. Before this the rough mica crystals are 'cobbed' to remove adhering dirt, rock and defective mica.

These jobs are done almost exclusively by women, and although poorly paid, they require considerable skill and dexterity.

- b) After the mica is semi-processed, women workers trim the mica with a knife to a beveled edge, removing broken and ragged edges, loose scales, and other major imperfections. Next, under the supervision of male foremen, women classify the trimmed mica according to grade (size) and quality in a process called 'picking'.
- c) With the exception of 'cobbing', 'picking' and 'splitting', men occupy all of the other higher skilled positions, like checking, passing, metering, binding, fabricating, and preparing the condenser.

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

- **Technology:** This proposed unit with modern processing and production machines including Jaw Crusher, Hammer Crusher, Micron Mill, Pin Mill, Hopper Assy, Feeder, Elevators and Silos, Powder Collector, Dust Cleaner, Air Compressor, Induced Draft Fan, Sound Proof Space, Shaking Sieve, Rotating Sieve, Cyclone, etc.
- **Location:** The unit would be located in or near an area where the raw material is available easily like Quetta, Zhob, Gilgit, Chitral, Peshawar, Lahore, Faisalabad, Lasbela, Hub, Khuzdar, Kohat, Chaghi or any other site where raw material can be transported easily.
- **Product:** The unit would produce Mica Powder industrial and commercial uses.
- **Target Market:** As domestic consumption is limited, mica industry will be dependent largely on the global export market. Most of the mica used for electrical applications is produced by India, Canada, Zimbabwe, Australia, South Africa, the United States, Madagascar, Argentina, Brazil, Norway, Korea and Guatemala.
- **Employment Generation:** The proposed project will provide direct employment to 18 people. Financial analysis shows the unit shall be profitable from the very first year of operation.



## 5.2 Production Process Flow



## 5.3 Manufacturing Process:

The process flow shows processing of mica via gravity separation. Feed preparation involves primary and secondary crushing and grinding followed by classifying to a predetermined size (8 to 20 mesh). The mica is elevated to a bank of spirals to produce a preliminary mica concentrate, producing the final mica product. The final mica product is used as a feed to produce high quality dry-ground Mica Powder.

Finally, laborers pack the mica powder.

## 5.4 Installed And Operational Capacities

The total installed capacity of the project is 12,000 Tons of Mica Powder along with assumed operational capacity of 60% during the first year of operations i.e. 7,200 Tons of Mica Powder. A gradual increase of 4% in production capacity per annum.

## 6 CRITICAL FACTORS

Mica Powder have a wide range of application, not only in industrial sector but also in the beauty and other industries. Certain critical factors involved during the production process of Mica Powder are:

- Availability of skilled labor.
- Awareness about the environmental issues related to the processing of Mica.
- Higher return on investment and a steady growth of business is closely associated with regular training and capacity building of the entrepreneur and employees.
- Prior experience and related / education in the related field of business.

## 7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

It is suitable to establish the production unit Quetta, Swat, Hub, Khuzdar, Loralai Bostan, Peshawar, Lahore and Karachi. However such a unit could be established in other parts of the country provided the main conditions are fulfilled such as Availability of Mica Ore. Along with, manpower availability, accessibility to markets, and reasonable demand & usage of Mica Powder should be considered.

## 8 POTENTIAL TARGET CUSTOMERS / MARKETS

As domestic consumption is limited, mica industry will be dependent largely on the global export market. Most of the mica used for electrical applications is produced by India, Canada, Zimbabwe, Australia, South Africa, the United States, Madagascar, Argentina, Brazil, Norway, Korea and Guatemala.

## 9 PROJECT COST SUMMARY

### 9.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of Rs. 234.58 million in the year one. The capacity utilization during year one is worked out at 60% with 4% increase in subsequent years up to the maximum capacity utilization of 90%.

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

**Table 1: Project Economics**

Description	Details
Internal Rate of Return (IRR)	35%
Payback Period (yrs.)	3.63
Net Present Value (Rs.)	66,502,663

### 9.2 Project Financing

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

**Table 2: Project Financing**

Description	Details
Total Equity (50%)	Rs. 25,047,861
Bank Loan (50%)	Rs. 25,047,861
Markup to the Borrower (%age / annum)	16%
Tenure of the Loan (Years)	5 Years

### 9.3 Project Cost

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

**Table 3: Project Cost**

Description	Amount Rs.
<b>Capital Cost</b>	
Land	4,777,777
Building / Infrastructure	21,097,240
Plant and Machinery	18,342,500
Furniture & Fixture	532,500
Office Equipment	497,500
Pre-operating Cost	823,930
Office vehicle	848,400
<b>Total Capital Cost</b>	<b>46,919,847</b>
<b>Working Capital</b>	
Equipment Spare Parts Inventory	16,500
Raw Material Inventory	1,699,830
Up-front Insurance Payments	959,545
Cash	500,000
<b>Total Working Capital</b>	<b>3,175,875</b>
<b>Total Project Cost</b>	<b>50,095,722</b>

## 9.4 Space Requirement

The space requirement for the proposed **Mica Processing Unit** is estimated considering various facilities including management office, production hall, storage, open space, etc. Details of space requirement and cost related to land & building is given below;

**Table 4: Space Requirement**

Description	Estimated Area (Sqft)	Unit Cost (Rs.)	Total Cost (Rs.)
Management Office	400	1,200	480,000
Working Shed Area	15,000	1,258	18,867,240
Cafeteria	600	1,000	600,000
Drive way / Pavement	17,000	50	850,000
Grounds	10,000	30	300,000
<b>Total</b>	<b>43,000</b>		<b>21,097,240</b>

## 9.5 Machinery & Equipment Requirement

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

**Table 5: Machinery & Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Jaw Crusher	1	2,500,000	2,500,000
Hammer Crusher	1	2,800,000	2,800,000
Hopper Assy	1	2,000,000	2,000,000
Feeder	1	1,100,000	1,100,000
Elevators and Silos	1	800,000	800,000
Powder Collector	1	400,000	400,000
Dust Cleaner	1	450,000	450,000
Air Compressor	1	300,000	300,000
Induced Draft Fan	1	500,000	500,000
Shaking Sieve	1	800,000	800,000
Rotating Sieve	1	200,000	200,000
Cyclone	1	800,000	800,000
Generator	1	800,000	800,000
Tube Well	1	800,000	800,000
Installation	1	450,000	450,000

Total machinery cost			15,250,000
GST 17%		0.17	
Total			17,842,500
Transportation charges	1	500,000	500,000
<b>Total</b>			<b>18,342,500</b>

## 9.6 Furniture & Fixtures Requirement

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

**Table 6: Furniture & Fixture**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Tables	3	6,000	18,000
Executive Chairs	3	5,000	15,000
Visitors Chairs	7	3,500	24,500
Carpeting & Wiring	1,000	300	300,000
Air Conditioners (2 ton Split)	1	90,000	90,000
<b>Total</b>			<b>532,500</b>

## 9.7 Office Equipment Requirement

Following office equipment will be required for **Mica Processing Unit**;

**Table 7: Office Equipment**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Laptop	2	50,000	50,000
Printer	1	20,000	20,000
Fax Machine	1	20,000	20,000
Telephone Exchange	1	150,000	150,000
Telephone Sets	3	2,500	7,500
Photo Copier	1	200,000	200,000
<b>Total</b>			<b>497,500</b>

## 9.8 Human Resource Requirement

In order to run operations of **Mica Processing Unit** smoothly, details of human resources required along with number of employees and monthly salary are recommended as under;

**Table 8: Human Resource Requirement**

Description	No. of Employees	Monthly Salary per person (Rs.)
CEO	1	50,000
Manager	1	45,000
Supervisor	1	35,000
Electrician	1	25,000
Accountant cum Receptionist	1	22,000
Salesman	2	22,000
Skilled Worker	4	22,000
Semi-Skilled Worker	4	18,000
Mechanic	1	25,000
Security Guard	2	18,000
<b>Total</b>	<b>18</b>	<b>442,000</b>

## 9.9 Utilities and other costs

An essential cost to be borne by the project is the cost of electricity and gas. The electricity expenses are estimated to be around Rs. 6,480,000 / year. Furthermore, promotional expense being essential for marketing of **Mica Processing Unit** is estimated as 1% of administrative / Cost of Sales expenses.

## 9.10 Revenue Generation

Based on the capacity utilization of 60% for Mica powder Sales revenue during the first year of operations is estimated as under;

Table 9: Revenue Generation – Year 1

Description	No. of Tons Produced (No.)	Finished Goods Inventory (Tons)	Units available for Sale (Tons)	Sale Price / Ton (Rs.)	Sales Revenue (Rs.)
Mica Powder	7,200	600	6,600	35,542	234,576,540

## 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

Name of Supplier	Address	Phone	Fax	E-mail	Website
Turchmir Engineering (services) Comapny	Nawab Chowk, Bagrian Road, Town ship, Lahore	042-35113377	042-35123388	info@turchmir.pk	www.turchmir.pk

### 10.2 Raw Material Suppliers

Name of Supplier	Address	Phone	Fax	E-mail	Website
Syed Saif Ullah	Quetta	03003901366			
Abdul Qayyum	Quetta	03458346975			

### 10.3 Technical Experts / Consultants

Name of Expert/ Organization	Address	Phone	Fax	E-mail	Website
Pakisatn mineral Development Corporation (PMDC)	13-H/9, Islamabad, Pakistan	051-9265123-4	51-9265127-28	pmdc@isb.com sats.net .pk	http://www.pmdc.gov.pk



## 11 USEFUL WEB LINKS

<b>Small &amp; Medium Enterprises Development Authority (SMEDA)</b>	<a href="http://www.smeda.org.pk">www.smeda.org.pk</a>
<b>Government of Pakistan</b>	<a href="http://www.pakistan.gov.pk">www.pakistan.gov.pk</a>
<b>Ministry of Industries &amp; Production</b>	<a href="http://www.moip.gov.pk">www.moip.gov.pk</a>
<b>Ministry of Education, Training &amp; Standards in Higher Education</b>	<a href="http://moptt.gov.pk">http://moptt.gov.pk</a>
<b>Government of Punjab</b>	<a href="http://www.punjab.gov.pk">www.punjab.gov.pk</a>
<b>Government of Sindh</b>	<a href="http://www.sindh.gov.pk">www.sindh.gov.pk</a>
<b>Government of Khyber Pakhtunkhwa</b>	<a href="http://www.khyberpakhtunkhwa.gov.pk">www.khyberpakhtunkhwa.gov.pk</a>
<b>Government of Balochistan</b>	<a href="http://www.balochistan.gov.pk">www.balochistan.gov.pk</a>
<b>Government of Gilgit Baltistan</b>	<a href="http://www.gilgitbaltistan.gov.pk">www.gilgitbaltistan.gov.pk</a>
<b>Government of Azad Jamu Kashmir</b>	<a href="http://www.ajk.gov.pk">www.ajk.gov.pk</a>
<b>Trade Development Authority of Pakistan (TDAP)</b>	<a href="http://www.tdap.gov.pk">www.tdap.gov.pk</a>
<b>Security Commission of Pakistan (SECP)</b>	<a href="http://www.secp.gov.pk">www.secp.gov.pk</a>
<b>Federation of Pakistan Chambers of Commerce and Industry (FPCCI)</b>	<a href="http://www.fpcci.com.pk">www.fpcci.com.pk</a>
<b>State Bank of Pakistan (SBP)</b>	<a href="http://www.sbp.org.pk">www.sbp.org.pk</a>
<b>Punjab Small Industries Corporation</b>	<a href="http://www.psic.gop.pk">www.psic.gop.pk</a>
<b>Sindh Small Industries Corporation</b>	<a href="http://www.ssic.gos.pk">www.ssic.gos.pk</a>
<b>Pakistan Horticulture Development and Export Company (PHDEC)</b>	<a href="http://www.phdec.org.pk">www.phdec.org.pk</a>
<b>Punjab Vocational Training Council (PVTC)</b>	<a href="http://www.pvtc.gop.pk">www.pvtc.gop.pk</a>
<b>Technical Education and Vocational Training Authority (TEVTA)</b>	<a href="http://www.tevta.org">www.tevta.org</a>
<b>Pakistan Readymade Garment Technical Training Institute</b>	<a href="http://www.prgmea.org/prgtti/">www.prgmea.org/prgtti/</a>
<b>Pakistan Council of Scientific and Industrial Research (PCSIR).</b>	<a href="http://www.pcsir.gov.pk">http://www.pcsir.gov.pk</a>
<b>Punjab Industrial Estates (PIE)</b>	<a href="http://www.pie.com.pk">www.pie.com.pk</a>
<b>Faisalabad Industrial Estate Development and Management Company (FIEDMC)</b>	<a href="http://www.fiedmc.com.pk">www.fiedmc.com.pk</a>

## 12 ANNEXURES

### 12.1 Income Statement

Statement Summaries										SMEDA
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Rs. in actuals Year 10
Revenue	234,576,540	298,694,128	349,206,276	406,833,913	472,495,014	547,219,996	632,165,025	728,626,859	821,298,222	905,104,163
Cost of goods sold	211,680,600	269,369,518	314,256,907	365,427,992	423,690,646	489,951,481	565,227,515	650,659,184	732,953,467	807,703,972
Gross Profit	22,895,940	29,324,610	34,949,369	41,405,921	48,804,368	57,268,515	66,937,510	77,967,676	88,344,755	97,400,191
<i>General administration &amp; selling expenses</i>										
Administration expense	2,719,200	3,722,689	4,085,135	4,482,870	4,919,328	5,398,281	5,923,865	6,500,621	7,133,531	7,828,061
Rental expense	-	-	-	-	-	-	-	-	-	-
Utilities expense	652,890	718,179	789,997	868,996	955,896	1,051,485	1,156,634	1,272,297	1,399,527	1,539,480
Travelling & Comm. expense (phone, fax, etc.)	24,720	33,843	37,138	40,753	44,721	49,075	53,853	59,097	64,850	71,164
Office vehicles running expense	25,452	27,997	30,797	33,877	37,264	40,991	45,090	49,599	54,559	60,014
Office expenses (stationary, etc.)	24,720	33,843	37,138	40,753	44,721	49,075	53,853	59,097	64,850	71,164
Promotional expense	2,345,765	2,986,941	3,492,063	4,068,339	4,724,950	5,472,200	6,321,650	7,286,269	8,212,982	9,051,042
Insurance expense	959,545	863,591	767,636	671,682	575,727	479,773	383,818	287,864	191,909	95,955
Professional fees (legal, audit, etc.)	1,172,883	1,493,471	1,746,031	2,034,170	2,362,475	2,736,100	3,160,825	3,643,134	4,106,491	4,525,521
Depreciation expense	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952
Amortization expense	164,786	164,786	164,786	164,786	164,786	-	-	-	-	-
Property tax expense	-	-	-	-	-	-	-	-	-	-
Miscellaneous expense	-	-	-	-	-	-	-	-	-	-
Subtotal	11,166,913	13,122,291	14,227,672	15,483,177	16,906,821	18,353,932	20,176,541	22,234,929	24,305,651	26,319,353
Operating Income	11,729,027	16,202,319	20,721,697	25,922,743	31,897,547	38,914,583	46,760,969	55,732,747	64,039,103	71,080,838
Other income	-	-	-	-	-	-	-	-	-	-
Gain / (loss) on sale of assets	-	-	-	-	-	-	-	-	-	-
Earnings Before Interest & Taxes	11,729,027	16,202,319	20,721,697	25,922,743	31,897,547	38,914,583	46,760,969	55,732,747	64,039,103	71,080,838
Interest expense	3,675,471	2,942,835	2,270,434	1,482,198	558,172	-	-	-	-	-
Earnings Before Tax	8,053,556	13,259,484	18,451,263	24,440,545	31,339,375	38,914,583	46,760,969	55,732,747	64,039,103	71,080,838
Tax	2,577,138	4,243,035	5,904,404	7,820,974	10,028,600	12,452,666	14,963,510	17,834,479	20,492,513	22,745,868
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>5,476,418</b>	<b>9,016,449</b>	<b>12,546,859</b>	<b>16,619,571</b>	<b>21,310,775</b>	<b>26,461,916</b>	<b>31,797,459</b>	<b>37,898,268</b>	<b>43,546,590</b>	<b>48,334,970</b>
Balance brought forward		5,476,418	10,869,651	17,562,382	25,636,464	35,210,429	46,254,259	58,538,789	72,327,792	86,905,787
Total profit available for appropriation	5,476,418	14,492,867	23,416,509	34,181,953	46,947,239	61,672,346	78,051,718	96,437,057	115,874,383	135,240,757
Dividend	-	3,623,217	5,854,127	8,545,488	11,736,810	15,418,086	19,512,930	24,109,264	28,968,596	33,810,189
Balance carried forward	5,476,418	10,869,651	17,562,382	25,636,464	35,210,429	46,254,259	58,538,789	72,327,792	86,905,787	101,430,568

## 12.2 Balance Sheet

Statement Summaries											SMEDA
Balance Sheet											Rs. in actuals
	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	500,000	515,641	5,910,676	9,600,989	13,707,224	17,996,230	28,761,483	40,191,669	52,668,611	65,758,970	95,687,856
Accounts receivable	-	3,496,154	3,973,962	4,828,189	5,634,053	6,552,807	7,598,972	8,788,842	10,140,696	11,550,127	12,865,245
Finished goods inventory	-	19,243,691	22,564,986	26,317,081	30,593,971	35,463,094	41,000,124	47,289,951	54,427,764	61,192,776	67,308,664
Equipment spare part inventory	16,500	22,061	27,081	33,127	40,397	49,126	59,589	72,116	85,352	98,765	-
Raw material inventory	1,699,830	2,380,895	3,061,881	3,923,884	5,012,898	6,386,256	8,115,354	10,289,041	12,757,432	15,465,132	-
Pre-paid annual land lease	-	-	-	-	-	-	-	-	-	-	-
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid insurance	959,545	863,591	767,636	671,682	575,727	479,773	383,818	287,864	191,909	95,955	-
<b>Total Current Assets</b>	<b>3,175,875</b>	<b>26,522,032</b>	<b>36,306,222</b>	<b>45,374,951</b>	<b>55,564,271</b>	<b>66,927,284</b>	<b>85,919,341</b>	<b>106,919,482</b>	<b>130,271,764</b>	<b>154,161,724</b>	<b>175,861,765</b>
<i>Fixed assets</i>											
Land	4,777,777	4,777,777	4,777,777	4,777,777	4,777,777	4,777,777	4,777,777	4,777,777	4,777,777	4,777,777	4,777,777
Building/Infrastructure	21,097,240	20,042,378	18,987,516	17,932,654	16,877,792	15,822,930	14,768,068	13,713,206	12,658,344	11,603,482	10,548,620
Machinery & equipment	18,342,500	16,508,250	14,674,000	12,839,750	11,005,500	9,171,250	7,337,000	5,502,750	3,668,500	1,834,250	-
Furniture & fixtures	532,500	479,250	426,000	372,750	319,500	266,250	213,000	159,750	106,500	53,250	-
Office vehicles	848,400	763,560	678,720	593,880	509,040	424,200	339,360	254,520	169,680	84,840	-
Office equipment	497,500	447,750	398,000	348,250	298,500	248,750	199,000	149,250	99,500	49,750	-
<b>Total Fixed Assets</b>	<b>46,095,917</b>	<b>43,018,965</b>	<b>39,942,013</b>	<b>36,865,061</b>	<b>33,788,109</b>	<b>30,711,157</b>	<b>27,634,205</b>	<b>24,557,253</b>	<b>21,480,301</b>	<b>18,403,349</b>	<b>15,326,397</b>
<i>Intangible assets</i>											
Pre-operation costs	823,930	659,144	494,358	329,572	164,786	-	-	-	-	-	-
Legal, licensing, & training costs	-	-	-	-	-	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>823,930</b>	<b>659,144</b>	<b>494,358</b>	<b>329,572</b>	<b>164,786</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>50,095,722</b>	<b>70,200,142</b>	<b>76,742,593</b>	<b>82,569,584</b>	<b>89,517,166</b>	<b>97,638,442</b>	<b>113,553,546</b>	<b>131,476,736</b>	<b>151,752,066</b>	<b>172,565,073</b>	<b>191,188,162</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Accounts payable	-	16,968,374	21,608,797	25,291,471	29,501,620	34,309,607	39,794,990	46,047,759	53,148,194	59,997,316	64,709,733
Export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Short term debt	-	-	-	-	-	-	-	-	-	-	-
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
<b>Total Current Liabilities</b>	<b>-</b>	<b>16,968,374</b>	<b>21,608,797</b>	<b>25,291,471</b>	<b>29,501,620</b>	<b>34,309,607</b>	<b>39,794,990</b>	<b>46,047,759</b>	<b>53,148,194</b>	<b>59,997,316</b>	<b>64,709,733</b>
<i>Other liabilities</i>											
Lease payable	-	-	-	-	-	-	-	-	-	-	-
Deferred tax	-	2,577,138	2,989,098	3,016,246	3,043,395	3,070,544	2,456,435	1,842,326	1,228,218	614,109	(0)
Long term debt	25,047,861	20,130,350	16,227,187	11,651,624	6,287,825	-	-	-	-	-	-
<b>Total Long Term Liabilities</b>	<b>25,047,861</b>	<b>22,707,488</b>	<b>19,216,285</b>	<b>14,667,871</b>	<b>9,331,220</b>	<b>3,070,544</b>	<b>2,456,435</b>	<b>1,842,326</b>	<b>1,228,218</b>	<b>614,109</b>	<b>(0)</b>
<i>Shareholders' equity</i>											
Paid-up capital	25,047,861	25,047,861	25,047,861	25,047,861	25,047,861	25,047,861	25,047,861	25,047,861	25,047,861	25,047,861	25,047,861
Retained earnings	-	5,476,418	10,869,651	17,562,382	25,636,464	35,210,429	46,254,259	58,538,789	72,327,792	86,905,787	101,430,568
<b>Total Equity</b>	<b>25,047,861</b>	<b>30,524,279</b>	<b>35,917,512</b>	<b>42,610,243</b>	<b>50,684,326</b>	<b>60,258,291</b>	<b>71,302,120</b>	<b>83,586,650</b>	<b>97,375,654</b>	<b>111,953,648</b>	<b>126,478,429</b>
<b>TOTAL CAPITAL AND LIABILITY</b>	<b>50,095,722</b>	<b>70,200,142</b>	<b>76,742,593</b>	<b>82,569,584</b>	<b>89,517,166</b>	<b>97,638,442</b>	<b>113,553,546</b>	<b>131,476,736</b>	<b>151,752,066</b>	<b>172,565,073</b>	<b>191,188,162</b>
<i>Note: Total assets value will differ from project cost due to first installment of leases paid at the start of year 0</i>											

## 12.3 Cash Flow Statement

Statement Summaries											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Rs. in actuals Year 10
<i>Operating activities</i>											
Net profit	-	5,476,418	9,016,449	12,546,859	16,619,571	21,310,775	26,461,916	31,797,459	37,898,268	43,546,590	48,334,970
Add: depreciation expense	-	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952	3,076,952
amortization expense	-	164,786	164,786	164,786	164,786	164,786	-	-	-	-	-
Deferred income tax	-	2,577,138	411,960	27,149	27,149	27,149	(614,109)	(614,109)	(614,109)	(614,109)	(614,109)
Accounts receivable	-	(3,496,154)	(477,808)	(854,227)	(805,864)	(918,754)	(1,046,165)	(1,189,870)	(1,351,854)	(1,409,431)	(1,315,119)
Finished good inventory	-	(19,243,691)	(3,321,295)	(3,752,095)	(4,276,890)	(4,869,122)	(5,537,030)	(6,289,827)	(7,137,813)	(6,765,011)	(6,115,889)
Equipment inventory	(16,500)	(5,561)	(5,020)	(6,046)	(7,270)	(8,728)	(10,463)	(12,527)	(13,237)	(13,412)	98,765
Raw material inventory	(1,699,830)	(681,065)	(680,986)	(862,002)	(1,089,015)	(1,373,357)	(1,729,099)	(2,173,686)	(2,468,392)	(2,707,700)	15,465,132
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Advance insurance premium	(959,545)	95,955	95,955	95,955	95,955	95,955	95,955	95,955	95,955	95,955	95,955
Accounts payable	-	16,968,374	4,640,422	3,682,674	4,210,150	4,807,987	5,485,383	6,252,769	7,100,435	6,849,122	4,712,418
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(2,675,875)	4,933,152	12,921,415	14,120,003	18,015,523	22,313,640	26,183,340	30,943,115	36,586,205	42,058,955	63,739,075
<i>Financing activities</i>											
Change in long term debt	25,047,861	(4,917,511)	(3,903,162)	(4,575,563)	(5,363,799)	(6,287,825)	-	-	-	-	-
Change in short term debt	-	-	-	-	-	-	-	-	-	-	-
Change in export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Add: land lease expense	-	-	-	-	-	-	-	-	-	-	-
Land lease payment	-	-	-	-	-	-	-	-	-	-	-
Change in lease financing	-	-	-	-	-	-	-	-	-	-	-
Issuance of shares	25,047,861	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares	-	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financ	50,095,722	(4,917,511)	(3,903,162)	(4,575,563)	(5,363,799)	(6,287,825)	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(46,919,847)	-	-	-	-	-	-	-	-	-	-
Acquisitions	-	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by invest	(46,919,847)	-	-	-	-	-	-	-	-	-	-
<b>NET CASH</b>	<b>500,000</b>	<b>15,641</b>	<b>9,018,252</b>	<b>9,544,440</b>	<b>12,651,724</b>	<b>16,025,815</b>	<b>26,183,340</b>	<b>30,943,115</b>	<b>36,586,205</b>	<b>42,058,955</b>	<b>63,739,075</b>
Cash balance brought forward		500,000	515,641	5,910,676	9,600,989	13,707,224	17,996,230	28,761,483	40,191,669	52,668,611	65,758,970
Cash available for appropriation	500,000	515,641	9,533,893	15,455,116	22,252,712	29,733,040	44,179,570	59,704,599	76,777,875	94,727,566	129,498,045
Dividend	-	-	3,623,217	5,854,127	8,545,488	11,736,810	15,418,086	19,512,930	24,109,264	28,968,596	33,810,189
Cash carried forward	500,000	515,641	5,910,676	9,600,989	13,707,224	17,996,230	28,761,483	40,191,669	52,668,611	65,758,970	95,687,856

## 13 KEY ASSUMPTIONS

### 13.1 Operating Assumptions

Description	Details
Days operational per month	22.5
Days operational per year	270

### 13.2 Production Assumptions

Description	Details
Maximum Capacity Utilization	95%
Total Production of tons per day	44.4
Total Production of tons per month	1,000
Total Production of the unit per year (100%)	12,000

### 13.3 Economy Related Assumptions

Description	Details
Electricity price growth rate	10%
Wage growth rate	10%
Sales price growth rate	10%

### 13.4 Cash Flow Assumptions

Description	Details
Accounts Receivable cycle (in days)	5
Accounts payable cycle (in days)	30

# Small and Medium Enterprises Development Authority

## HEAD OFFICE

4th Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road, Lahore  
Tel: (92 42) 111 111 456, Fax: (92 42) 36304926-7

[www.smeda.org.pk](http://www.smeda.org.pk), [helpdesk@smeda.org.pk](mailto:helpdesk@smeda.org.pk)

REGIONAL OFFICE PUNJAB	REGIONAL OFFICE SINDH	REGIONAL OFFICE KPK	REGIONAL OFFICE BALOCHISTAN
3 <sup>rd</sup> Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road Lahore, Tel: (042) 111-111-456 Fax: (042) 36304926-7 <a href="mailto:helpdesk.punjab@smeda.org.pk">helpdesk.punjab@smeda.org.pk</a>	5 <sup>TH</sup> Floor, Bahria Complex II, M.T. Khan Road, Karachi. Tel: (021) 111-111-456 Fax: (021) 5610572 <a href="mailto:helpdesk-khi@smeda.org.pk">helpdesk-khi@smeda.org.pk</a>	Ground Floor State Life Building The Mall, Peshawar. Tel: (091) 9213046-47 Fax: (091) 286908 <a href="mailto:helpdesk-pew@smeda.org.pk">helpdesk-pew@smeda.org.pk</a>	Bungalow No. 15-A Chaman Housing Scheme Airport Road, Quetta. Tel: (081) 831623, 831702 Fax: (081) 831922 <a href="mailto:helpdesk-qta@smeda.org.pk">helpdesk-qta@smeda.org.pk</a>