



Pre-feasibility Study

FLUORITE MINING

December 2023

“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

1	DISCLAIMER.....	1
2	EXECUTIVE SUMMARY	2
3	INTRODUCTION TO SMEDA.....	3
4	PURPOSE OF THE DOCUMENT.....	3
5	BRIEF DESCRIPTION OF PROJECT & PRODUCT.....	4
5.1	PRODUCTION PROCESS FLOW.....	5
5.2	INSTALLED AND OPERATIONAL CAPACITIES.....	5
6	CRITICAL FACTORS	5
7	GEOGRAPHICAL POTENTIAL FOR INVESTMENT	6
8	POTENTIAL TARGET CUSTOMERS / MARKETS.....	6
9	PROJECT COST SUMMARY.....	6
9.1	PROJECT ECONOMICS	7
9.2	PROJECT COST	8
9.3	SPACE REQUIREMENT	9
9.4	MACHINERY & EQUIPMENT REQUIREMENT	9
9.5	FURNITURE & FIXTURES REQUIREMENT.....	10
9.6	OFFICE EQUIPMENT REQUIREMENT.....	10
9.7	OFFICE VEHICLE REQUIREMENT	11
9.8	HUMAN RESOURCE REQUIREMENT	11
TABLE 11 (A):	HUMAN RESOURCE REQUIREMENT (DAILY WAGE WORKERS).....	12
9.9	UTILITIES AND OTHER COSTS.....	12
9.10	REVENUE GENERATION	12
9.11	COST SHEET	12
10	CONTACT DETAILS.....	14
10.1	MACHINERY SUPPLIERS.....	14
10.2	TECHNICAL EXPERTS / CONSULTANTS.....	14
11	USEFUL WEB LINKS.....	15
12	ANNEXURES	16
12.1	INCOME STATEMENT	16
12.2	BALANCE SHEET.....	17
12.3	CASH FLOW STATEMENT.....	18
13	KEY ASSUMPTIONS.....	19
13.1	OPERATING COST ASSUMPTIONS	19
13.2	PRODUCTION COST ASSUMPTIONS	19
13.3	REVENUE ASSUMPTIONS IN Y1	19

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

Document Control

Document No.	PREF- 01
Revision	No. 01
Prepared by	SMEDA-Balochistan
Revision Date	December, 2023
For information	<u>helpdesk.balochistan@smeda.org.pk</u>

2 EXECUTIVE SUMMARY

Pakistan is gifted with a diverse and abundant array of minerals, contributing significantly to its geological richness. The country's mineral wealth includes coal, natural gas, gemstones, limestone, gypsum, fluorite, and substantial reserves of metallic minerals such as copper, gold, and iron ore. Balochistan, Khyber Pakhtunkhwa, Sindh and Punjab provinces are particularly known for hosting various mineral deposits.

This particular pre-feasibility study provides the basic information for starting fluorite mining business. The geographical potential for investing in fluorite mining in Pakistan is substantial, particularly in regions like Balochistan and parts of Khyber Pakhtunkhwa, which are known for abundant fluorite deposits. Fluorite, or fluorspar, is a mineral of considerable importance found in various areas of Balochistan, Pakistan. One notable region for fluorite mining is Loralai in Balochistan. The province is recognized for its significant deposits of this colorful mineral, which exhibits a range of hues such as purple, blue, green, yellow, and pink. Fluorite is extracted from underground veins using conventional mining methods, involving drilling, blasting, and subsequent processing. The mineral is valued for its applications in industries such as metallurgy, chemicals, and optics.

A fluorite mining project involves the exploration and extraction of fluorite deposits for various industrial applications. The projects basically encompass activities like geologic surveys, drilling and blasting to access fluorite rich veins followed by extraction to meet the demand. Balancing economic gains with environmental stewardship is a key aspect of successful fluorite mining project. The fluorite will be sold at site to overcome the extra financial burden in the shape of transportation cost.

According to the estimates of this pre-feasibility, the proposed fluorite mining operation has an annual operational capacity of 4,950 tons. In the first year, it will be operated at 50% capacity utilization, with a steady annual growth rate of 5%, aiming to reach a maximum capacity utilization of 85%. The operation will run for 330 days each year, with a daily operational duration of 12 hours.

The total project cost for setting up this unit is Rs. 105.16 million out of which Rs. 93.92 million is capital cost and Rs. 11.23 million as working capital. The project is financed through 100% equity, however, project economics based on 50% debt are also given in the document. The project NPV based on 100% equity is around Rs. 190.954 million, with an IRR of 44% and Payback Period of 2.93 years. The total area for the proposed leased mine is 100 Acres.

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 **Fluorite Mining** business 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 on, which form basis of any Investment Decision.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

Pakistan is gifted with a diverse and abundant array of minerals, contributing significantly to its geological richness. The country's mineral wealth includes coal, natural gas, gemstones, limestone, gypsum, fluorite, and substantial reserves of metallic minerals such as copper, gold, and iron ore. Balochistan, Khyber Pakhtunkhwa, Sindh and Punjab provinces are particularly known for hosting various mineral deposits.

Balochistan is considered the most mineral-abundant province in Pakistan. This province is rich in various minerals, including natural gas, coal, copper, gold, chromite, lead, zinc, and other valuable resources. The diverse geological formations in Balochistan make it a significant contributor to Pakistan's overall mineral wealth.

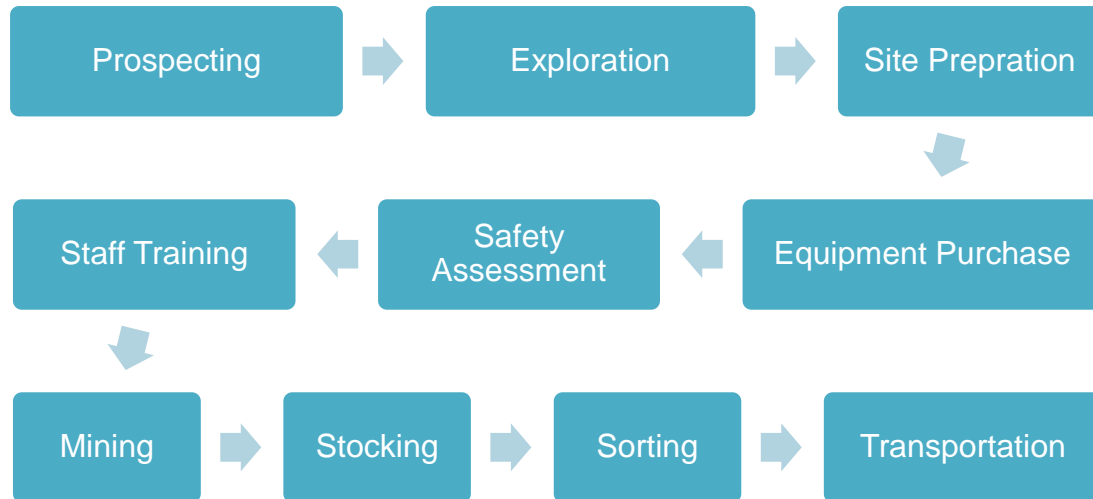
Fluorite, or fluorspar, is a mineral of considerable importance found in various areas of Balochistan, Pakistan. One notable region for fluorite mining is Loralai in Balochistan. The province is recognized for its significant deposits of this colorful mineral, which exhibits a range of hues such as purple, blue, green, yellow, and pink. Fluorite is extracted from underground veins using conventional mining methods, involving drilling, blasting, and subsequent processing. The mineral is valued for its applications in industries such as metallurgy, chemicals, and optics.

A fluorite mining project involves the exploration and extraction of fluorite deposits for various industrial applications. The projects basically encompass activities like geologic surveys, drilling and blasting to access fluorite rich veins followed by extraction to meet the demand. Balancing economic gains with environmental stewardship is a key aspect of successful fluorite mining project. The fluorite will be sold at site to overcome the extra financial burden in the shape of transportation cost. The proposed mine area is 100 acres.

5.1 Production Process Flow

The process flow of proposed fluorite mining facility will be as follow:

Figure: Process Flow Diagram of Fluorite Mining



5.2 Installed and Operational Capacities

The fluorite mining operation has an annual operational capacity of 4,950 tons. Currently, it will be functioning at 50% capital utilization, with a steady annual growth rate of 5%, aiming to reach a maximum capacity utilization of 85%. The operation will run for 330 days each year, with a daily operational duration of 12 hours.

6 CRITICAL FACTORS

The most critical considerations / factors for the success of this project are as follows:

- ⇒ Comprehensive geological surveys to accurately identify and assess the fluorite deposits, ensuring effective resource utilization.
- ⇒ Continuous evaluation of global market demand for fluorite and monitoring pricing trends to make informed production and sales decisions.
- ⇒ Adherence to local and international regulations governing mining activities to avoid legal issues and ensure responsible resource extraction.
- ⇒ Implementation of stringent safety measures to protect the well-being of workers and mitigate the risk of accidents or health hazards.
- ⇒ Ongoing training programs for the workforce to ensure they possess the necessary skills and knowledge for safe and efficient operations.

- ⇒ Effective financial planning and management to optimize capital utilization, control costs, and ensure the project's economic viability.
- ⇒ Identification and mitigation of potential risks, including market fluctuations, geopolitical issues, and unforeseen challenges that may impact the project.
- ⇒ Implementation of robust quality control measures at every stage of the production process to meet industry standards and customer expectations.

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The geographical potential for investing in fluorite mining in Pakistan is substantial, particularly in regions like Balochistan and parts of Khyber Pakhtunkhwa, which are known for abundant fluorite deposits. The country's diverse geological formations, coupled with ongoing infrastructure development and government support for the mining sector, create a favorable investment climate. With Pakistan strategically located and offering accessibility to international markets, investing in fluorite mining not only taps into the economic potential of the sector but also aligns with the increasing global demand for fluorite in various industries. This presents an opportunity for investors to participate in a promising sector with the potential for downstream industrial growth and positive socio-economic impact.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

The potential target customers and markets for fluorite mining are diverse, reflecting the mineral's versatile applications. Industries such as metallurgy, where fluorite is used as a flux in the production of metals like aluminum and steel, represent a key market. Additionally, the chemical industry relies on fluorite for the manufacture of hydrofluoric acid, a crucial component in various industrial processes. The optics industry is another significant market, utilizing fluorite for the production of lenses and prisms due to its unique optical properties. Furthermore, fluorite's application in the production of cement, ceramics, and glass expands its market reach. With the global demand for these products steadily increasing, fluorite mining is positioned to serve a broad range of customers in both domestic and international markets, contributing to the economic growth of the industry and the regions involved in its extraction.

9 PROJECT COST SUMMARY

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

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

9.1 Project Economics

To evaluate the project's financial viability, a 100% equity-based business model has been assumed. The following tables present the Internal Rate of Return, Payback Period, Net Present Value, and Breakeven analysis for the proposed venture:

Table 1: Project Economics (100% Equity based)

Description	Details
Internal Rate of Return (IRR)	44%
Payback Period (Years)	2.93
Net Present Value @ 17% (Rs.)	190,954,528

Calculation of break-even analysis is as follows:

Table 2: Breakeven (100% Equity Based)

BREAKEVEN ANALYSIS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Break Even Point (Sales)	38,835,625	41,427,287	42,910,319	44,536,919	46,322,396	47,962,819	50,118,640	52,489,881	54,668,653	56,879,428
Break Even Point (Unit)	864	837	789	744	704	662	629	599	567	537
Margin of Safety	63.6%	69.1%	73.4%	76.8%	79.6%	82.1%	84.1%	85.7%	86.5%	87.3%

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 provided in the table below:

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

Description	Details
Internal Rate of Return (IRR)	43%
Payback Period (Years)	3.02
Net Present Value @ 17% (Rs.)	199,725,303

The financial assumptions for Debt: Equity are as follows:

Table 4: Financial Assumptions for Debt:Equity Model

Description	Details
Debt	50%
Equity	50%
Interest Rate on Debt	28%
Debt Tenure	5 Years
Debt Payment / Year	1

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.)
Building/Infrastructure	30,796,600
Machinery & equipment	47,647,700
Furniture & fixtures	424,000
Office vehicles	13,000,000
Office equipment	840,000
Pre-operating costs	900,000
Training costs	320,203
Total Capital Costs	93,928,503
Working Capital	
Equipment spare part inventory	98,828
Upfront land lease	9,681,066
Upfront insurance payment	952,954
Cash	500,000

Total Working Capital	11,232,848
Total Investment	105,161,351

9.3 Space Requirement

The space requirement for the proposed fluorite mining is estimated considering various facilities including management office and workers rest room etc. are as below:

Table 6: Building and Infrastructural Requirement

Description	Area (Sq. Ft.)	Unit Cost / Sq. Ft (Rs.)	Total (Rs.)
Management Office	500	4,500	2,250,000
Workers Rest Room	500	4,500	2,250,000
Washrooms x 4	160	4,500	720,000
Payment/driveway	20,000	100	2,000,000
Ground	20,000	100	2,000,000
Mining Area	4,315,320	5	21,576,600
Total Infrastructure	4,356,480		30,796,600

9.4 Machinery & Equipment Requirement

Machinery and equipment required for the proposed project are stated below:

Table 7: Machinery & Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Excavator	1	23,000,000	23,000,000
Wheel Loader	1	16,000,000	16,000,000
Rock Drill	5	75,000	375,000
Air Compressor	2	1,300,000	2,600,000
Generator 30KVA	1	2,000,000	2,000,000
Shovels	20	2,000	40,000

Pick	10	45,000	450,000
Chisels	10	1,470	14,700
Hammers	10	1,800	18,000
Tube well	1	650,000	650,000
Other Mining Equipment, Personal Protective Equipment (PPE) & Misc.	1	2,000,000	2,000,000
Transportation Charges		500,000	500,000
Total			47,647,700

9.5 Furniture & Fixtures Requirement

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

Table 8: Furniture & Fixture

Description	Quantity/Sq.ft	Cost/ unit	Total Cost (Rs.)
Rolling chair	4	17,500	70,000
Visitor Chair	6	6,000	36,000
Electric wiring & lighting	1	100,000	100,000
Fans	8	7,500	60,000
Carpeting	600	180	108,000
Tables	4	12,500	50,000
Total Furniture and Fixture Cost			424,000

9.6 Office Equipment Requirement

Following office equipment will be required for the proposed project:

Table 9: Office Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Laptop (Core i7)	4	150,000	600,000
3 in 1 Printer + Scanner + Photocopier	1	45,000	45,000

Air conditioner (1.5 Tons)	1	195,000	195,000
Total Office Equipment Cost			840,000

9.7 Office Vehicle Requirement

Following vehicles will be required for the proposed fluorite mining project. Given the steep costs of new vehicles and the challenging condition of the roads, it is proposed to procure pre-owned vehicles.

Table 10: Office Vehicles

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Toyota Hilux 4x4	2	6,500,000	13,000,000
Total Office Vehicle Cost			13,000,000

9.8 Human Resource Requirement

In order to run operations of fluorite mining smoothly, details of human resources required along with monthly salary (Table 11) and details of daily wage workers (Table 11.a) are recommended as under:

Table 11: Human Resource Requirement

Description	No. of Employees	Monthly Salary Per Person (Rs.)
Owner/Mine Manager	1	100,000
Geologist	1	200,000
Mining Engineer	1	200,000
Admin and Accounts Officer	1	100,000
Mechanic	1	50,000
Drivers	2	40,000
Helper/Peon	1	32,000

Table 11 (a): Human Resource Requirement (Daily Wage Workers)

Description	No. of Workers	Daily Wage Per Person (Rs.)
Daily Wage Workers	20	3000

9.9 Utilities and Other Costs

An essential cost to be covered by the project is the daily wage workers, fuel cost for excavator, wheel loader and generator which are included in the cost of mining. Furthermore, promotional expense being essential for marketing of fluorite mining is estimated as Rs. 213,469 for year 1.

9.10 Revenue Generation

Based on the 50% capacity utilization, sales revenue during the first year of operations is estimated as under:

Table 12: Revenue Generation – Year 1

Description	Production in Tons/Yearly	Sale Price/Ton (Rs.)	Production at 50% Capacity Utilization in Tons at Y1	Production Quantity in Finished Goods Inventory in Tons	Revenue Generated (Rs.)
Fluorite	4,950	45,000	2,371.875	103.125	106,734,375
Total Revenue Generated					106,734,375

9.11 Cost Sheet

During the first year of operation, the cost for operating fluorite mining is estimated as under:

Table 13: Cost Sheet – Year 1

Description	Units/Day	Cost/Rate (Rs.)	Cost Per Day (Rs.)	Cost/Year 1 (Rs.)	Cost/Year 1 at 50% Capital Utilization (Rs.)
Labor (Daily Wage)	20 Workers	3,000	60,000	19,800,000	9,900,000

Fuel (Generator and Vehicles)	225 Liters	303.18	68,215.5	22,511,115	11,255,558
Fuel (Excavator and Wheel loader)	400 Liters	303.18	84,890	40,019,760	4,950,000
Royalty	15 Tons	2000	121,272	9,900,000	20,009,880
Provincial Government Tax	5%	-	-	5,336,719	2,668,359
Total				97,567,594	48,783,797
COGS/Ton				19,710.625	
Production quantity sold in Y1 at 50% Utilization				2475	
Production quantity in finished goods inventory				103.125	
Production quantity sold less finished goods inventory				2,371.8750	
				Tons	
Cost of Goods Sold Y1					46,751,139

10 CONTACT DETAILS

In order to facilitate potential investors, contact details of private sector Service Providers relevant to the proposed project are given as under:

10.1 Machinery Suppliers

Name of Supplier	Address	Contact
Atlas Copco	588, Block H3, AbduHaque Road, opposite Emporium Mall, Johar Town, Lahore, Punjab	+92 (0) 42 111128527 atlascope.pakistan@pk.atlascope.com www.atlascope.com
Allied Engineering & Services (Pvt.) Ltd	21/3, Sector No.22, Korangi Industrial Area, Karachi	+92-21- 35066901 saad.ali@aesl.com.pk www.aesl.com.pk/

10.2 Technical Experts / Consultants

Name of Expert/Organization	Address	Contact
Water, Minerals & Environmental (WME) Consultants	Suite # F-7, 1st Floor, A 166/167, QuettaTown, Sector 18-A, Scheme-33, Karachi	021-34690011-2 info@wmeconsultants.com.pk www.wmeconsultants.com.pk

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 Balochistan	www.balochistan.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Government of Azad Jamu 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
Punjab Vocational Training Council (PVTTC)	www.pvtc.gop.pk
Technical Education and Vocational Training Authority (TEVTA)	www.tevta.org
Punjab Industrial Estates (PIE)	www.pie.com.pk
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	www.fiedmc.com.pk
Pakistan Industrial and Technical Assistance (PITAC)	www.pitac.gov.pk
Cold Storages Chain in Agriculture	www.agribusiness.org.pk
List of Retail Companies in Pakistan	www.companylist.org
Aziz Group of Cold Storages	www.zizgrp.com

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	106,734,375	134,253,281	161,154,984	192,094,495	227,610,359	268,308,450	314,870,055	368,060,897	405,861,746	446,447,921
<i>Cost of sales</i>										
Cost of goods sold 1	46,751,139	58,804,802	70,588,121	84,140,057	99,696,498	117,522,827	137,917,457	161,215,785	177,773,082	195,550,390
Cost of goods sold 2	-	-	-	-	-	-	-	-	-	-
Operating costs 1 (direct labor)	-	-	-	-	-	-	-	-	-	-
Operating costs 2 (machinery maintenance)	23,719	29,834	35,812	42,688	50,580	59,624	69,971	81,791	90,191	99,211
Operating costs 3 (direct electricity)	-	-	-	-	-	-	-	-	-	-
Operating costs 4 (direct water)	-	-	-	-	-	-	-	-	-	-
Operating costs 5 (direct gas)	-	-	-	-	-	-	-	-	-	-
Total cost of sales	46,774,857	58,834,636	70,623,934	84,182,745	99,747,078	117,582,452	137,987,428	161,297,576	177,863,273	195,649,601
Gross Profit	59,959,518	75,418,645	90,531,051	107,911,751	127,863,280	150,725,998	176,882,627	206,763,321	227,998,473	250,798,320
<i>General administration & selling expenses</i>										
Administration expense	9,144,000	9,601,200	10,081,260	10,585,323	11,114,589	11,670,319	12,253,835	12,866,526	13,509,853	14,185,345
Administration benefits expense	457,200	480,060	504,063	529,266	555,729	583,516	612,692	643,326	675,493	709,267
Land lease rental expense	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066
Building rental expense	-	-	-	-	-	-	-	-	-	-
Electricity expense	-	-	-	-	-	-	-	-	-	-
Water expense	-	-	-	-	-	-	-	-	-	-
Gas expense	-	-	-	-	-	-	-	-	-	-
Travelling expense	-	-	-	-	-	-	-	-	-	-
Communications expense (phone, fax, mail, internet, etc.)	548,640	576,072	604,876	635,119	666,875	700,219	735,230	771,992	810,591	851,121
Office vehicles running expense	-	-	-	-	-	-	-	-	-	-
Office expenses (stationary, entertainment, janitorial services, etc)	749,808	787,298	826,663	867,996	911,396	956,966	1,004,814	1,055,055	1,107,808	1,163,198
Promotional expense	213,469	268,507	322,310	384,189	455,221	536,617	629,740	736,122	811,723	892,896
Insurance expense	952,954	857,659	762,363	667,068	571,772	476,477	381,182	285,886	190,591	95,295
Professional fees (legal, audit, consultants, etc.)	320,203	402,760	483,465	576,283	682,831	804,925	944,610	1,104,183	1,217,585	1,339,344
Depreciation expense	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000
Amortization of pre-operating costs	180,000	180,000	180,000	180,000	180,000	180,000	-	-	-	-
Amortization of legal, licensing, and training costs	32,020	32,020	32,020	32,020	32,020	32,020	32,020	32,020	32,020	32,020
Property tax expense	-	-	-	-	-	-	-	-	-	-
Bad debt expense	1,067,344	1,342,533	1,611,550	1,920,945	2,276,104	2,683,084	3,148,701	3,680,609	4,058,617	4,464,479
Miscellaneous expense 1	-	-	-	-	-	-	-	-	-	-
Subtotal	32,377,704	33,240,174	34,120,636	35,090,276	36,158,604	37,156,210	38,454,889	39,887,785	41,126,347	42,445,032
Operating Income	27,581,814	42,178,471	56,410,415	72,821,474	91,704,676	113,569,789	138,427,737	166,875,536	186,872,126	208,353,289
Other income (interest on cash)	1,078,909	2,999,842	4,731,873	6,443,861	7,647,269	8,788,867	10,495,928	12,378,520	14,284,368	16,663,361
Other income 2	-	-	-	-	-	-	-	-	-	-
Gain / (loss) on sale of machinery & equipment	-	-	-	-	-	-	-	-	-	-
Gain / (loss) on sale of office equipment	-	-	-	-	-	-	-	-	-	-
Gain / (loss) on sale of office vehicles	-	-	-	-	5,200,000	-	-	-	-	-
Earnings Before Interest & Taxes	28,660,722	45,178,313	61,142,288	79,265,336	104,551,946	122,358,656	148,923,666	179,254,056	201,156,494	225,016,650
Interest on short term debt	-	-	-	-	-	-	-	-	-	-
Interest on export refinancing	-	-	-	-	-	-	-	-	-	-
Interest expense on machinery & equipment lease	-	-	-	-	-	-	-	-	-	-
Interest expense on office equipment lease	-	-	-	-	-	-	-	-	-	-
Interest expense on office vehicles lease	-	-	-	-	-	-	-	-	-	-
Interest expense on long term debt (Project Loan)	-	-	-	-	-	-	-	-	-	-
Interest expense on long term debt (Working Capital Loan)	-	-	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-	-	-	-	-
Earnings Before Tax	28,660,722	45,178,313	61,142,288	79,265,336	104,551,946	122,358,656	148,923,666	179,254,056	201,156,494	225,016,650
Tax	11,750,896	18,523,108	25,068,338	32,498,788	42,866,298	50,167,049	61,058,703	73,494,163	82,474,162	92,256,826
NET PROFIT/(LOSS) AFTER TAX	16,909,826	26,655,205	36,073,950	46,766,548	61,685,648	72,191,607	87,864,963	105,759,893	118,682,331	132,759,823
Balance brought forward	-	8,454,913	17,555,059	26,814,504	36,790,526	49,238,087	60,714,847	74,289,905	90,024,899	104,353,615
Total profit available for appropriation	16,909,826	35,110,118	53,629,009	73,581,052	98,476,174	121,429,694	148,579,810	180,049,798	208,707,230	237,113,438
Dividend	8,454,913	17,555,059	26,814,504	36,790,526	49,238,087	60,714,847	74,289,905	90,024,899	104,353,615	118,556,719
Balance carried forward	8,454,913	17,555,059	26,814,504	36,790,526	49,238,087	60,714,847	74,289,905	90,024,899	104,353,615	118,556,719

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	500,000	21,078,170	38,918,663	55,718,804	73,158,417	79,786,972	95,990,375	113,928,193	133,642,209	152,045,154	181,222,068
Accounts receivable	-	8,772,688	9,903,602	12,140,066	14,517,102	17,248,145	20,380,225	23,966,240	28,065,656	31,805,040	35,026,425
Finished goods inventory	-	2,033,689	2,460,764	2,952,917	3,518,893	4,168,535	4,912,916	5,764,488	6,737,245	7,410,970	8,152,067
Equipment spare part inventory	98,828	130,524	164,512	205,901	256,168	317,071	390,700	479,536	555,225	641,284	-
Raw material inventory	-	-	-	-	-	-	-	-	-	-	-
Pre-paid annual land lease	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	-
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid machinery & equipment lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid office equipment lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid office vehicles lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid insurance	952,954	857,659	762,363	667,068	571,772	476,477	381,182	285,886	190,591	95,295	-
Total Current Assets	11,232,848	42,553,797	61,890,971	81,365,822	101,703,418	111,678,266	131,736,463	154,105,408	178,871,991	201,678,809	224,400,559
<i>Fixed assets</i>											
Land	-	-	-	-	-	-	-	-	-	-	-
Building/Infrastructure	30,796,600	29,256,770	27,716,940	26,177,110	24,637,280	23,097,450	21,557,620	20,017,790	18,477,960	16,938,130	15,398,300
Machinery & equipment	47,647,700	42,882,930	38,118,160	33,353,390	28,588,620	23,823,850	19,059,080	14,294,310	9,529,540	4,764,770	-
Furniture & fixtures	424,000	381,600	339,200	296,800	254,400	212,000	169,600	127,200	84,800	42,400	-
Office vehicles	13,000,000	10,400,000	7,800,000	5,200,000	2,600,000	13,000,000	10,400,000	7,800,000	5,200,000	2,600,000	-
Office equipment	840,000	756,000	672,000	588,000	504,000	420,000	336,000	252,000	168,000	84,000	-
Total Fixed Assets	92,708,300	83,677,300	74,646,300	65,615,300	56,584,300	60,553,300	51,522,300	42,491,300	33,460,300	24,429,300	15,398,300
<i>Intangible assets</i>											
Pre-operation costs	900,000	720,000	540,000	360,000	180,000	-	-	-	-	-	-
Legal, licensing, & training costs	320,203	288,183	256,163	224,142	192,122	160,102	128,081	96,061	64,041	32,020	-
Total Intangible Assets	1,220,203	1,008,183	796,163	584,142	372,122	160,102	128,081	96,061	64,041	32,020	-
TOTAL ASSETS	105,161,351	127,239,279	137,333,433	147,565,264	158,659,840	172,391,667	183,386,844	196,692,769	212,396,331	226,140,129	239,798,859
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable	-	3,855,237	4,849,245	5,821,630	6,940,185	8,224,451	9,696,423	11,380,846	13,302,970	14,671,607	16,080,789
Export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Short term debt	-	-	-	-	-	-	-	-	-	-	-
<i>Other liabilities</i>											
Total Current Liabilities	-	3,855,237	4,849,245	5,821,630	6,940,185	8,224,451	9,696,423	11,380,846	13,302,970	14,671,607	16,080,789
<i>Other liabilities</i>											
Machinery & equipment lease payable	-	-	-	-	-	-	-	-	-	-	-
Office equipment lease payable	-	-	-	-	-	-	-	-	-	-	-
Office vehicle lease payable	-	-	-	-	-	-	-	-	-	-	-
Deferred tax	-	9,767,779	9,767,779	9,767,779	9,767,779	9,767,779	7,814,223	5,860,667	3,907,111	1,953,556	(0)
Long term debt (Project Loan)	-	-	-	-	-	-	-	-	-	-	-
Long term debt (Working Capital Loan)	-	-	-	-	-	-	-	-	-	-	-
Total Long Term Liabilities	-	9,767,779	9,767,779	9,767,779	9,767,779	9,767,779	7,814,223	5,860,667	3,907,111	1,953,556	(0)
<i>Shareholders' equity</i>											
Paid-up capital	105,161,351	105,161,351	105,161,351	105,161,351	105,161,351	105,161,351	105,161,351	105,161,351	105,161,351	105,161,351	105,161,351
Retained earnings	-	8,454,913	17,555,059	26,814,504	36,790,526	49,238,087	60,714,847	74,289,905	90,024,899	104,353,615	118,556,719
Total Equity	105,161,351	113,616,264	122,716,410	131,975,855	141,951,877	154,399,438	165,876,198	179,451,256	195,186,250	209,514,966	223,718,070
TOTAL CAPITAL AND LIABILITIES	105,161,351	127,239,279	137,333,433	147,565,264	158,659,840	172,391,667	183,386,844	196,692,769	212,396,331	226,140,129	239,798,859
	-	-	-	-	-	-	-	-	-	(0)	0

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
Operating activities											
Net profit		16,909,826	26,655,205	36,073,950	46,766,548	61,685,648	72,191,607	87,864,963	105,759,893	118,682,331	132,759,823
Add: depreciation expense		9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000	9,031,000
amortization of pre-operating costs		180,000	180,000	180,000	180,000	180,000	-	-	-	-	-
amortization of training costs		32,020	32,020	32,020	32,020	32,020	32,020	32,020	32,020	32,020	32,020
Deferred income tax		9,767,779	-	-	-	-	(1,953,556)	(1,953,556)	(1,953,556)	(1,953,556)	(1,953,556)
Accounts receivable		(8,772,688)	(1,130,914)	(2,236,463)	(2,377,036)	(2,731,043)	(3,132,080)	(3,586,015)	(4,099,416)	(3,739,385)	(3,221,385)
Finished goods inventory		(2,033,689)	(427,075)	(492,153)	(565,976)	(649,642)	(744,381)	(851,572)	(972,757)	(673,725)	(741,097)
Equipment inventory	(98,828)	(31,696)	(33,988)	(41,389)	(50,267)	(60,903)	(73,629)	(88,836)	(75,689)	(86,060)	641,284
Raw material inventory	-	-	-	-	-	-	-	-	-	-	-
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid machinery & equipment lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid office equipment lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid office vehicles lease interest	-	-	-	-	-	-	-	-	-	-	-
Advance insurance premium	(952,954)	95,295	95,295	95,295	95,295	95,295	95,295	95,295	95,295	95,295	95,295
Accounts payable		3,855,237	994,008	972,385	1,118,554	1,284,266	1,471,973	1,684,423	1,922,124	1,368,638	1,409,182
Other liabilities		-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(1,051,782)	29,033,084	35,395,551	43,614,646	54,230,139	68,866,642	76,918,250	92,227,723	109,738,915	122,756,560	138,052,568
Financing activities											
Project Loan - principal repayment		-	-	-	-	-	-	-	-	-	-
Working Capital Loan - principal repayment		-	-	-	-	-	-	-	-	-	-
Add: land lease expense		9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066	9,681,066
Land lease payment	(9,681,066)	(9,681,066)	(9,681,066)	(9,681,066)	(9,681,066)	(9,681,066)	(9,681,066)	(9,681,066)	(9,681,066)	(9,681,066)	-
Machinery & equipment lease principal repaym	-	-	-	-	-	-	-	-	-	-	-
Office equipment lease principal repayment	-	-	-	-	-	-	-	-	-	-	-
Office vehicles lease principal repayment	-	-	-	-	-	-	-	-	-	-	-
Short term debt principal repayment	-	-	-	-	-	-	-	-	-	-	-
Export re-finance principal repayment	-	-	-	-	-	-	-	-	-	-	-
Additions to export refinancing	-	-	-	-	-	-	-	-	-	-	-
Additions to lease financing	-	-	-	-	-	-	-	-	-	-	-
Additions to Project Loan	-	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	-	-	-	-	-	-	-	-	-	-	-
Issuance of shares	105,161,351	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares	-	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	95,480,285	-	-	-	-	-	-	-	-	-	9,681,066
Investing activities											
Capital expenditure	(93,928,503)	-	-	-	-	(13,000,000)	-	-	-	-	-
Acquisitions	-	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by investing activities	(93,928,503)	-	-	-	-	(13,000,000)	-	-	-	-	-
NET CASH	500,000	29,033,084	35,395,551	43,614,646	54,230,139	55,866,642	76,918,250	92,227,723	109,738,915	122,756,560	147,733,634
Cash balance brought forward		500,000	21,078,170	38,918,663	55,718,804	73,158,417	79,786,972	95,990,375	113,928,193	133,642,209	152,045,154
Cash available for appropriation	500,000	29,533,084	56,473,722	82,533,309	109,948,943	129,025,059	156,705,222	188,218,098	223,667,108	256,398,769	299,778,787
Dividend		8,454,913	17,555,059	26,814,504	36,790,526	49,238,087	60,714,847	74,289,905	90,024,899	104,353,615	118,556,719
Cash balance	500,000	21,078,170	38,918,663	55,718,804	73,158,417	79,786,972	95,990,375	113,928,193	133,642,209	152,045,154	181,222,068
Cash carried forward	500,000	21,078,170	38,918,663	55,718,804	73,158,417	79,786,972	95,990,375	113,928,193	133,642,209	152,045,154	181,222,068

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Details
Operational days/ year	330
Hours operational/ days	12

13.2 Production Cost Assumptions

Description	Details
Initial capital utilization	50%
Annual capital utilization growth	5%
Maximum capital utilization	85%

13.3 Revenue Assumptions in Y1

Description	Details (Rs.)
Revenue	106,734,375
Cost of goods sold	46,751,139
COGS/Ton	19,710.625
Sale Price/Ton	45,000
Production per year	2,475 Tons
Production quantity sold	2,371.875 Tons
Production quantity in finished good inventory	103.125 Tons