



Pre-feasibility Study

GEMSTONES CUTTING & FACETING

June 2022

“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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Document Control

| | |
|-----------------|-----------------------|
| Document No. | PREF-NO |
| Revision | No.1 |
| Prepared by | SMEDA-Balochistan |
| Revision Date | June 2022 |
| For information | Shakoora@smeda.org.pk |

2 EXECUTIVE SUMMARY

Gemstones Cutting and Faceting is proposed to be located in adjoining areas and major towns of any of the major cities of Pakistan.

The project is aiming at to add value to the raw Gemstones such as Lapis Lazuli, Malachite, Jasper, Rhutilated Quartz, Onyx, Amethyst, Chalcedony, Turquoise and Agate etc. locally available as well as Gemstones coming from various parts of the world especially, stones coming from Afghanistan & Iran to produce Cabochon, Beads, Tumbles and Carvings / Handicrafts etc.

The Gemstones Cutting and Faceting project has the capacity of Producing **160,000 gram** annually and will be operational for 330 days a year and 8 hours a day in 1 shift. Initial utilization **70%** and will increase it by **5%** annually. The Maximum capacity utilization will be **95%**.

The total project investment is **Rs. 1,823,634/-** with an Internal Rate of Return (IRR) of **40%** and Net Present Value (NPV) of **2,121,731/-**. The total project investment would be paid back in **2.64** years.

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 **Gemstones Cutting and Faceting** 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

The project aims to develop a production facility for manufacturing value added products made from locally available gemstones. The value-added products will include Beads, Cabochons, Carvings / Handicrafts. Major market demand is for Cabochons, tumbles, beads & followed by carved products including handicrafts. Pakistan has beautiful range of gemstones for ornamental purposes and jewelry such as Lapis Lazuli, Malachite, Jasper, Rhutilated Quartz, Onyx, Amethyst, Chalcedony, Turquoise and Agate etc. Most of these gemstones are presently sold in raw or minimally processed form, with very little added value. This project will have a demonstration effect & encourage other entrepreneurs to follow suit in seeking to obtain greater revenues from their gemstone resources by adding value within Pakistan prior to sales. Moreover, gemstones acquired from the nearby Afghani and Irani markets are also expected to be processing here. Thus, the facility has the potential to become economically viable for the production of value-added gem products.

The Metalogenic provenances of Pakistan contains number of precious and semiprecious gemstones being supplied to the local markets in Pakistan & are exported to the international market without value addition & worth-while economic benefits. The mine owners as well as local Gem dealers are unaware of the true

worth of their product & most often, as they are compelled to sell their products on a very nominal price. They are discouraged to run their mines on appropriate lines as such abandon their mining activity while running into ultimate losses.

Establishment of this facility will provide these mine owners an opportunity to sell their products at their doorsteps & will get educated on how the raw material is value added & the economic benefits are taken. The facility will contribute allot towards generation of economic activities in the far-flung Gemstone bearing areas of Balochistan through reactivation of closed mines & working on new findings. This activity will give a much-needed boost to the Gems Sector at large. The project is aiming at to add value to the raw material locally available as well as Gemstones coming from various parts of the world especially, stones coming from Afghanistan & Iran.

For the project at least (04) highly skilled persons would be required to produce the products as per market demand. Time required to process 160 Kg (160,000 grams) of rough stones is estimated to be around 12 months

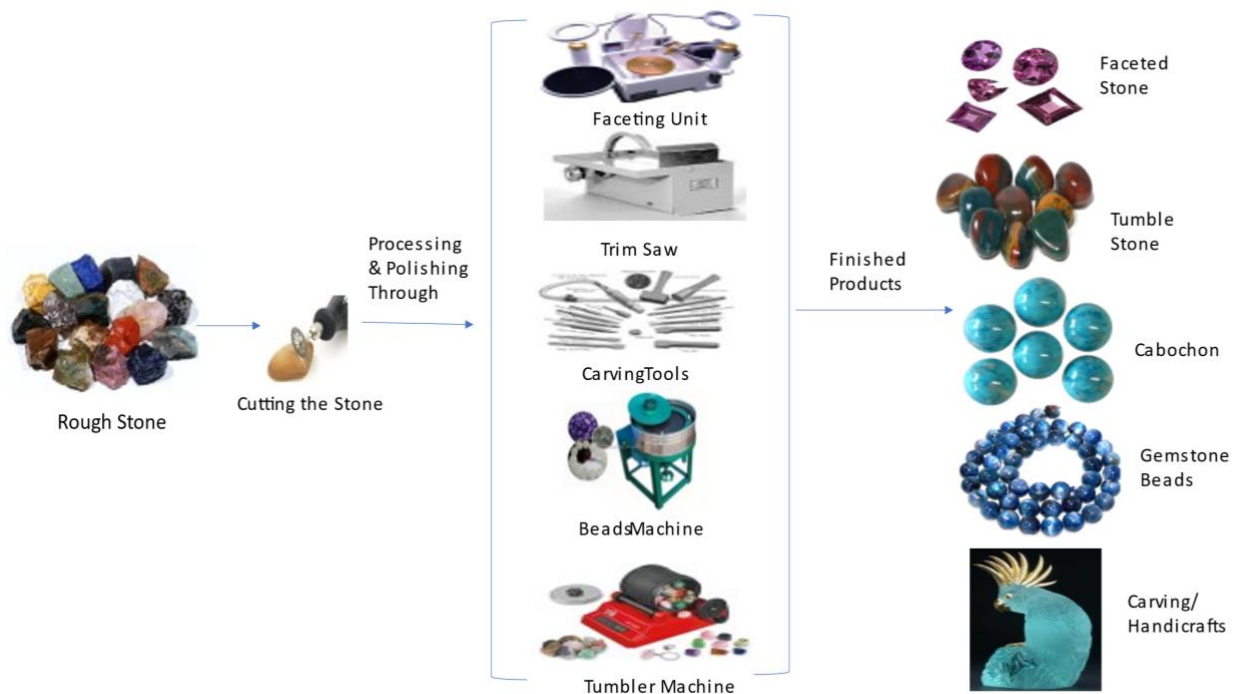
Following key parameters must be addressed as per pre-feasibility study under preparation

- **Technology:** This proposed unit with local processing machines including Faceting unit, carving tools, Tumblers, Trim saw, Grinder Machine, Bead Machine will be used to produce four products, namely, Cabochon, Beads, Tumblers, and Carvings/Handicraft
- **Location:** The unit will be located at or near Gemstone clusters including Peshawar, Rawalpindi, Quetta, Mansehra, Mardan, or in areas where the raw material and skilled labour will be accessible
- **Product:** Keeping in view the market demand and characteristics “only properly establish and well protected systems” is recommended to be the final product of the proposed prefeasibility.
- **Target Market:** In addition to local markets in Karachi, Lahore and Islamabad an enormous export market for the Pakistani gemstones exists in Europe, USA, Middle East, Hong Kong, Taiwan, etc.
- **Employment Generation:** The proposed project will provide direct employment to 4 people. Financial analysis shows the unit shall be profitable from the very first year of operation

5.1 PRODUCTION PROCESS

The Gemstones Cutting and Faceting unit would cut and process the rough gemstone, and would produce the four types of products i.e., Cabochon, Beads, Faceting Stones, Tumbled stones, and Gemstone Carving/Handicrafts.

Figure 1: Production Process



5.2 POSSIBLE PRODUCT CATEGORIES AFTER PROCESSING

- **Faceted Stone**

A faceted stone is a type of gemstone cut where the stone has flat top, polished faces called facets across it and a pointed bottom. This cut refracts the light inside the gem and reflects light on the outside facets of the gemstone, maximizing the stone's brilliance and fire. The product is created by using gemstone faceted plant. The product can be used to make jewelry or other adornments.

- **Tumbled Stone**

Tumbled stones are small, rounded, and brightly polished rocks, crystals, and minerals. These are created by putting rough rocks in a machine called a rock tumbler. It tumbles the rocks until their edges and surfaces become smooth, shiny, and polished. Tumble stones can be used in many ways such as lucky stones, vase

filler, decorations, ground cover, accents in potted plants, game markers, and making jewelry.

- **Cabochon**

A gemstone cabochon is a type of gemstone that has been shaped and polished to be a dome shape on the top and is usually flat on the bottom. By using various cutting tools and trim saw machine, the gemstone will be processed into cabochon. The Cabochons will come in a whole range of sizes and shapes, different shapes will be available in all sorts of geometric and asymmetrical cuts. This product is used creating new handmade jewelry designs. Price of Cabochon varies with the quality of material and the weight of the stone.

- **Gemstone Beads**

A gemstone is processed into gemstone beads by using Beads machine. The beads are processed into unique shapes and design. Gemstone beads can be further used to make necklaces, bracelets, earrings, rings or any other type of jewelry.

- **Carvings/Handicraft**

Stone carving is an activity where pieces of rough natural stone are shaped and molded into works of art that are beautiful, and long lasting. The skilled Labour is used to convert the gemstone into carving/Handicrafts by using various carving tools. It is used for decoration in jewelry items.

5.3 INSTALLED AND OPERATIONAL CAPACITIES

The Gemstones Cutting and Faceting unit has the capacity of producing approximately 160,000 Gram annually and will be operational for 330 days a year and 24 hours a day in 1 shift. Initially the unit will be operated at 70% of capital utilization and will increase it by 5% annually. The Maximum capacity utilization will be 95%.

6. CRITICAL FACTORS

Before making the decision to invest in manufacturing unit for perfume, one should carefully analyze the associated risk factors. The important considerations in this regard include:

- Appointment of skilled staff
- Use of good quality raw materials

- Factory location must take into account the availability of electric power and water supply, proximity to supply sources and markets, and optimum visibility and ease of access by customers.
- Sufficient inventory of cutting blades and proper maintenance of machinery.
- Machinery should be calibrated and good quality
- Good cutting & faceting skills are required to produce quality stones.
- Use of modern technology and machines for maintaining quality and boosting appearances
- Maintenance of manufacturing machinery
- Continuous inspection of production process
- Fine finishing as visual appeal is central to the consumer decisions

7. GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The proposed manufacturing unit has potential to provide good entrepreneurship opportunity if the business is established in large to medium cities of Pakistan like Karachi, Lahore, Islamabad, Peshawar, Quetta, Gujranwala, Sheikhpura, Faisalabad, Marden, Muzaffarabad, Murdan, Dir, Mansehra etc. The proposed locations are suitable where the raw material is accessible and Skilled Labour is available.

8. POTENTIAL TARGET CUSTOMERS / MARKETS

The market of the proposed unit is primarily segmented between male and female customers. The female segment is larger than the male segment. An increasing expenditure by women on personal well-being is one of the major reasons for the growth of this segment. Increasing participation of women in the workforce is expected to further increase the use of Jewelry to look presentable and leave a good impression on people. Furthermore, there is huge potential to target the international market for processed gemstone include, UAE, Thailand, Japan, UK, USA, Europe et.

9 PROJECT COST SUMMARY

9.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of **Rs. 6,332,660/-** 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 **95%**.

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) | 40% |
| Payback Period (yrs.) | 2.64 |
| Net Present Value (Rs.) | 2,121,731 |

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%) | 911,817 |
| Bank Loan (50%) | 911,817 |
| Markup to the Borrower (%age / annum) | 16% |
| Tenure of the Loan (Years) | 8 |

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. |
|---------------------|------------|
| Capital Cost | |
| Plant and Machinery | 985,000 |
| Furniture & Fixture | 208,000 |
| Office Equipment | 85,000 |

| | |
|--------------------------------|------------------|
| Total Capital Cost | 1,278,000 |
| Working Capital | |
| Equipment spare part inventory | 6,708 |
| Raw Material Inventory | 78,926 |
| Up-front Building Rent | 360,000 |
| Cash | 100,000 |
| Total Working Capital | 545,634 |
| Total Project Cost | 1,823,634 |

9.4 Space Requirement

The space requirement for the proposed **Gemstones Cutting and Faceting** project are on rental basis and monthly rent is given in the following table;

Table 4: Space Requirement

| Description | Estimated Area (Sq.ft) | Unit Cost (Rs.) | Total Cost (Rs.) |
|---------------------------------|------------------------|-----------------|------------------|
| Management and Production Space | 500 | 60 | 30,000 |
| Total | | | 30,000 |

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.) |
|-----------------------------|----------|-----------------|------------------|
| Faceting Unit | 1 | 600,000 | 600,000 |
| Carving Tools | 1 | 80,000 | 80,000 |
| Tumbled Machine | 1 | 70,000 | 70,000 |
| Trim Saw | 1 | 75,000 | 75,000 |
| Beads Machine | 1 | 120,000 | 120,000 |
| Cutting and Polishing Tools | 2 | 20,000 | 40,000 |
| Total | | | 985,000 |

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.) |
|----------------------------|----------|-----------------|------------------|
| Table | 3 | 20,000 | 60,000 |
| Chairs | 5 | 8,000 | 40,000 |
| Faceting Unit Setup | 1 | 28,000 | 28,000 |
| Wooden Racks | 1 | 20,000 | 20,000 |
| Air Conditioners (1.5 ton) | 1 | 60,000 | 60,000 |
| Total | | | 208,000 |

9.7 Office Equipment Requirement

Following office equipment will be required for **Gemstones Cutting and Faceting** project;

Table 7: Office Equipment

| Description | Quantity | Unit Cost (Rs.) | Total Cost (Rs.) |
|-------------------|----------|-----------------|------------------|
| Desktop Computers | 1 | 55,000 | 55,000 |
| Printer | 1 | 22,000 | 22,000 |
| Telephone Sets | 1 | 8,000 | 8,000 |
| Total | | | 85,000 |

9.8 Human Resource Requirement

In order to run operations of **Gemstones Cutting and Faceting** project smoothly, at least one (01) manager/supervisor and (03) two highly skilled persons would be required to produce the products as per market demand. Time required to process 160 Kg (160,000 Grams) of rough stones is estimated to be around 12 months. Following human resources are required to run a Gemstones Cutting & Faceting Facility;

Table 8: Human Resource Requirement

| Description | No. of Employees | Monthly Salary per person (Rs.) |
|-------------|------------------|---------------------------------|
|-------------|------------------|---------------------------------|

| | | |
|--------------------|----------|--------|
| Manager/Supervisor | 1 | 60,000 |
| Skilled Labour | 3 | 40,000 |
| Total | 4 | |

9.9 Utilities and other costs

An essential cost to be borne by the project is the cost of utilities cash in hand for running expenses are Rs. 100,000 per month which includes the utilities. Furthermore, promotional expense being essential for the marketing of Project unit is estimated as 1% of Revenue that for year 1.

9.10 Revenue Generation

Based on the capacity utilization of **70%**, sales revenue during the first year of operations is estimated as under;

Table 9: Revenue Generation – Year 1

| Description | No. of Units Produced (No.) | Finished Goods Inventory (No.) | Units available for Sale (No.) | Sale Price / unit (Rs.) | Sales Revenue (Rs.) |
|--------------|-----------------------------|--------------------------------|--------------------------------|-------------------------|---------------------|
| All Purpose | 112,000 | 4667 | 107,333 | 59 | 6,332,660 |
| Total | | | | | 6,332,660 |

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 |
|--|--|--------------|-----|--|---|
| GemLapidary | GemLapidary, 222E, Wakwella Road, Galle 80000, Sri Lanka | +94777900200 | | info@GemLapidary.com | https://gemlapidary.com/contact-us/ |
| Shenzhen Oln Electronic Technology Co., Ltd. | Floor 8, Xixixiang Chamber Of Commerce Building, Jinhai Road, Xixiang Street, Shenzhen, Guangdong, China | | | tasanol.en.alibaba.com | http://www.tasanoltools.com |

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 |
| Ministry of Education, Training & Standards in Higher Education | http://moptt.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 |
| 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 Readymade Garment Technical Training Institute | www.prgmea.org/prgtti/ |
| Livestock & Dairy Development Department, Government of Punjab. | www.livestockpunjab.gov.pk |
| Punjab Industrial Estates (PIE) | www.pie.com.pk |
| Faisalabad Industrial Estate Development and Management Company (FIEDMC) | www.fiedmc.com.pk |

12 ANNEXURES

12.1 Income Statement

| Statement Summaries Income Statement | | | | | | | | | | SMEDA |
|--|----------------|----------------|----------------|----------------|----------------|------------------|----------------|----------------|----------------|-----------------|
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| | Rs. in actuals | | | | | | | | | |
| Revenue | 6,332,660 | 7,413,343 | 8,304,389 | 9,266,007 | 10,303,026 | 11,420,581 | 12,017,966 | 12,618,864 | 13,249,807 | 13,912,298 |
| Cost of goods sold | 3,089,971 | 3,678,367 | 4,195,931 | 4,773,107 | 5,416,158 | 6,131,971 | 6,658,316 | 7,214,283 | 7,816,999 | 8,470,425 |
| Gross Profit | 3,242,689 | 3,734,975 | 4,108,458 | 4,492,900 | 4,886,868 | 5,288,611 | 5,359,650 | 5,404,581 | 5,432,808 | 5,441,873 |
| <i>General administration & selling expenses</i> | | | | | | | | | | |
| Administration expense | 1,440,000 | 1,580,200 | 1,734,051 | 1,902,881 | 2,088,148 | 2,291,453 | 2,514,552 | 2,759,372 | 3,028,029 | 3,322,842 |
| Travelling & Comm. expense (phone, fax, etc.) | 144,000 | 158,020 | 173,405 | 190,288 | 208,815 | 229,145 | 251,455 | 275,937 | 302,803 | 332,284 |
| Office expenses (stationary, etc.) | 72,000 | 79,010 | 86,703 | 95,144 | 104,407 | 114,573 | 125,728 | 137,969 | 151,401 | 166,142 |
| Professional fees (legal, audit, etc.) | 15,832 | 18,533 | 20,761 | 23,165 | 25,758 | 28,551 | 30,045 | 31,547 | 33,125 | 34,781 |
| Depreciation expense | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 |
| Amortization expense | - | - | - | - | - | - | - | - | - | - |
| Subtotal | 2,476,265 | 2,730,231 | 2,993,539 | 3,281,738 | 3,597,155 | 3,942,335 | 4,288,240 | 4,665,107 | 5,077,340 | 5,528,325 |
| Operating Income | 766,425 | 1,004,744 | 1,114,919 | 1,211,162 | 1,289,713 | 1,346,276 | 1,071,410 | 739,474 | 355,468 | (86,452) |
| Other income | - | - | - | - | - | - | - | - | - | - |
| Gain / (loss) on sale of assets | - | - | - | - | - | - | - | - | - | - |
| Earnings Before Interest & Taxes | 766,425 | 1,004,744 | 1,114,919 | 1,211,162 | 1,289,713 | 1,346,276 | 1,071,410 | 739,474 | 355,468 | (86,452) |
| Interest expense | 157,079 | 140,412 | 127,162 | 111,629 | 93,421 | 72,075 | 47,053 | 17,719 | - | - |
| Earnings Before Tax | 609,345 | 864,332 | 987,757 | 1,099,533 | 1,196,293 | 1,274,201 | 1,024,357 | 721,755 | 355,468 | (86,452) |
| Tax | 121,869 | 172,866 | 197,551 | 219,907 | 239,259 | 254,840 | 204,871 | 144,351 | 71,094 | - |
| NET PROFIT/(LOSS) AFTER TAX | 487,476 | 691,466 | 790,206 | 879,626 | 957,034 | 1,019,360 | 819,486 | 577,404 | 284,375 | (86,452) |
| Balance brought forward | | 487,476 | 1,178,942 | 1,969,148 | 2,848,774 | 3,805,809 | 4,825,169 | 5,644,655 | 6,222,059 | 6,506,434 |
| Total profit available for appropriation | 487,476 | 1,178,942 | 1,969,148 | 2,848,774 | 3,805,809 | 4,825,169 | 5,644,655 | 6,222,059 | 6,506,434 | 6,419,982 |
| Owner's Withdrawals | - | - | - | - | - | - | - | - | - | - |
| Balance carried forward | 487,476 | 1,178,942 | 1,969,148 | 2,848,774 | 3,805,809 | 4,825,169 | 5,644,655 | 6,222,059 | 6,506,434 | 6,419,982 |

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 |
| Assets | | | | | | | | | | | |
| <i>Current assets</i> | | | | | | | | | | | |
| Cash & Bank | 430,000 | 663,694 | 1,352,737 | 2,078,036 | 2,876,214 | 3,720,274 | 4,584,918 | 5,227,232 | 5,609,763 | 5,887,208 | 6,432,184 |
| Accounts receivable | - | 520,493 | 564,904 | 645,934 | 722,071 | 804,207 | 892,751 | 963,228 | 1,012,472 | 1,063,096 | 1,116,251 |
| Finished goods inventory | - | 134,347 | 153,692 | 175,287 | 199,368 | 226,197 | 256,060 | 277,430 | 300,595 | 325,708 | 352,934 |
| Raw material inventory | 78,926 | 103,587 | 130,095 | 162,745 | 202,881 | 252,130 | 297,460 | 350,170 | 412,220 | 485,266 | - |
| Total Current Assets | 545,634 | 1,463,680 | 2,248,181 | 3,114,644 | 4,059,863 | 5,069,738 | 6,105,687 | 6,900,957 | 7,427,325 | 7,864,025 | 7,901,369 |
| <i>Fixed assets</i> | | | | | | | | | | | |
| Land | - | - | - | - | - | - | - | - | - | - | - |
| Building/Infrastructure | - | - | - | - | - | - | - | - | - | - | - |
| Machinery & equipment | 985,000 | 886,500 | 788,000 | 689,500 | 591,000 | 492,500 | 394,000 | 295,500 | 197,000 | 98,500 | - |
| Furniture & fixtures | 208,000 | 187,200 | 166,400 | 145,600 | 124,800 | 104,000 | 83,200 | 62,400 | 41,600 | 20,800 | - |
| Office equipment | 85,000 | 76,500 | 68,000 | 59,500 | 51,000 | 42,500 | 34,000 | 25,500 | 17,000 | 8,500 | - |
| Total Fixed Assets | 1,278,000 | 1,150,200 | 1,022,400 | 894,600 | 766,800 | 639,000 | 511,200 | 383,400 | 255,600 | 127,800 | - |
| <i>Intangible assets</i> | | | | | | | | | | | |
| Pre-operation costs | - | - | - | - | - | - | - | - | - | - | - |
| Total Intangible Assets | - | - | - | - | - | - | - | - | - | - | - |
| TOTAL ASSETS | 1,823,634 | 2,613,880 | 3,270,581 | 4,009,244 | 4,826,663 | 5,708,738 | 6,616,887 | 7,284,357 | 7,682,925 | 7,991,825 | 7,901,369 |
| Liabilities & Shareholders' Equity | | | | | | | | | | | |
| <i>Current liabilities</i> | | | | | | | | | | | |
| Accounts payable | - | 204,270 | 246,419 | 285,041 | 328,532 | 377,479 | 431,219 | 469,178 | 509,649 | 553,874 | 552,280 |
| Total Current Liabilities | - | 204,270 | 246,419 | 285,041 | 328,532 | 377,479 | 431,219 | 469,178 | 509,649 | 553,874 | 552,280 |
| <i>Other liabilities</i> | | | | | | | | | | | |
| Deferred tax | - | 98,500 | 98,500 | 98,500 | 98,500 | 98,500 | 78,800 | 59,100 | 39,400 | 19,700 | 17,290 |
| Long term debt | 911,817 | 911,817 | 834,902 | 744,737 | 639,040 | 515,134 | 369,882 | 199,608 | - | - | - |
| Total Long Term Liabilities | 911,817 | 1,010,317 | 933,402 | 843,237 | 737,540 | 613,634 | 448,682 | 258,708 | 39,400 | 19,700 | 17,290 |
| <i>Shareholders' equity</i> | | | | | | | | | | | |
| Paid-up capital | 911,817 | 911,817 | 911,817 | 911,817 | 911,817 | 911,817 | 911,817 | 911,817 | 911,817 | 911,817 | 911,817 |
| Retained earnings | - | 487,476 | 1,178,942 | 1,969,148 | 2,848,774 | 3,805,809 | 4,825,169 | 5,644,655 | 6,222,059 | 6,506,434 | 6,419,982 |
| Total Equity | 911,817 | 1,399,293 | 2,090,759 | 2,880,965 | 3,760,591 | 4,717,626 | 5,736,986 | 6,556,472 | 7,133,876 | 7,418,251 | 7,331,799 |
| TOTAL CAPITAL AND LIABILITIES | 1,823,634 | 2,613,880 | 3,270,581 | 4,009,244 | 4,826,663 | 5,708,738 | 6,616,887 | 7,284,357 | 7,682,925 | 7,991,825 | 7,901,369 |
| Note: Total assets value will differ from project cost due to first installment of leases paid at the start of year 0 | | | | | | | | | | | |

12.3 Cash Flow Statement

| Statement Summaries | | | | | | | | | | | SMEDA |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------|
| Cash Flow Statement | | | | | | | | | | | |
| | | | | | | | | | | | 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 |
| <i>Operating activities</i> | | | | | | | | | | | |
| Net profit | - | 487,476 | 691,466 | 790,206 | 879,626 | 957,034 | 1,019,360 | 819,486 | 577,404 | 284,375 | (86,452) |
| Add: depreciation expense | - | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 | 127,800 |
| amortization expense | - | - | - | - | - | - | - | - | - | - | - |
| Deferred income tax | - | 98,500 | - | - | - | - | (19,700) | (19,700) | (19,700) | (19,700) | (2,410) |
| Accounts receivable | - | (520,493) | (44,412) | (81,030) | (76,137) | (82,136) | (88,544) | (70,477) | (49,244) | (50,624) | (53,155) |
| Finished good inventory | - | (134,347) | (19,346) | (21,595) | (24,081) | (26,829) | (29,863) | (21,370) | (23,165) | (25,113) | (27,226) |
| Equipment inventory | (6,708) | (1,852) | (1,892) | (2,260) | (2,695) | (3,208) | (2,737) | (3,085) | (3,531) | (4,041) | 32,009 |
| Raw material inventory | (78,926) | (24,662) | (26,508) | (32,650) | (40,136) | (49,250) | (45,330) | (52,710) | (62,050) | (73,045) | 485,266 |
| Accounts payable | - | 204,270 | 42,149 | 38,622 | 43,491 | 48,947 | 53,741 | 37,958 | 40,472 | 44,225 | (1,595) |
| Other liabilities | - | - | - | - | - | - | - | - | - | - | - |
| Cash provided by operations | (115,634) | 233,694 | 765,958 | 815,464 | 903,876 | 967,966 | 1,009,895 | 812,588 | 582,139 | 277,445 | 544,976 |
| <i>Financing activities</i> | | | | | | | | | | | |
| Change in long term debt | 911,817 | - | (76,915) | (90,165) | (105,698) | (123,906) | (145,252) | (170,274) | (199,608) | - | - |
| Issuance of shares | 911,817 | - | - | - | - | - | - | - | - | - | - |
| Cash provided by / (used for) financing act | 1,823,634 | - | (76,915) | (90,165) | (105,698) | (123,906) | (145,252) | (170,274) | (199,608) | - | - |
| <i>Investing activities</i> | | | | | | | | | | | |
| Capital expenditure | (1,278,000) | - | - | - | - | - | - | - | - | - | - |
| Cash (used for) / provided by investing acti | (1,278,000) | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | |
| NET CASH | 430,000 | 233,694 | 689,043 | 725,299 | 798,178 | 844,060 | 864,644 | 642,313 | 382,531 | 277,445 | 544,976 |
| | | | | | | | | | | | |
| Cash balance brought forward | | 430,000 | 663,694 | 1,352,737 | 2,078,036 | 2,876,214 | 3,720,274 | 4,584,918 | 5,227,232 | 5,609,763 | 5,887,208 |
| Cash available for appropriation | 430,000 | 663,694 | 1,352,737 | 2,078,036 | 2,876,214 | 3,720,274 | 4,584,918 | 5,227,232 | 5,609,763 | 5,887,208 | 6,432,184 |
| Cash carried forward | 430,000 | 663,694 | 1,352,737 | 2,078,036 | 2,876,214 | 3,720,274 | 4,584,918 | 5,227,232 | 5,609,763 | 5,887,208 | 6,432,184 |

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

| Description | Details |
|-------------------------|---------|
| Operational Days/ year | 330 |
| Hours operational/ days | 24 |
| Shift Length (Hours) | 8 |

13.2 Production Cost Assumptions

| Description | Details |
|-----------------------------------|---------|
| Initial Capital utilization | 70% |
| Annual Capital Utilization Growth | 5% |
| Maximum Capital Utilization | 95% |

13.3 Financial Assumptions

| Description | Details |
|--------------------|---------|
| Interest Rate | 16% |
| Debt: Equity Ratio | 50:50 |
| Debt Tenure | 8 Years |

13.4 Economy Related Assumptions

| Description | Details |
|-------------------------------|---------|
| Electricity price growth rate | 10% |
| Wage growth rate | 10% |
| Sales growth rate | 5% |

13.5 Cash Flow Assumptions

| Description | Details |
|-------------------------------------|---------|
| Accounts Receivable cycle (in days) | 30 |
| Accounts payable cycle (in days) | 30 |