



Pre-feasibility Study

MARBLE AND ONYX PRODUCTS MANUFACTURING

June 2019

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

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PROJECT PROFILE

1.1 OPPORTUNITY RATIONALE

God has bestowed Pakistan with enormous mineral resources including Marble and Onyx –generously available in NWFP and Balochistan provinces. Pakistan is blessed with more than 40 types of natural stone across the country. Pakistan has an estimated 297 billion tons of extractable reserves. Pakistan’s annual production of dimension stone is 3.82 million tons; K-P’s production is 1.7 million tons, Balochistan 1.4 million tons, FATA 0.5 million tons, Sindh 0.17 million tons and Punjab 0.0525 million tons.¹ Marble is used for both construction purposes and Handicrafts manufacturing, whereas, Onyx which is a transparent type of marble (transparent in the sense that light can pass through it) and generally used by handicrafts manufacturing industry. Availability of high quality marble and onyx reserves in Pakistan in great quantities and the demand of its products in the export markets i.e. European Union countries, Central Asian countries etc. make this sector highly attractive.

International tourists are the main customer of the products made of marble and onyx and it has reached an all-time record of 1326 million in 2017². In relative terms growth over 2016 corresponds to almost 07%. The World has witnessed the highest growth in international tourists in seven years since 2010. Growth is common to all regions, but was particularly strong in Europe (+8%) and in Asia and Pacific (+6%). The growth was also registered in the Americas (+5%). Africa (+9%) and Middle East (+5%) performed below the world average, but on positive results in the previous year, and still substantially bettered their results. In absolute terms the number of international tourist arrivals worldwide increased in 2018 by 86 million, representing a volume equivalent to a new ‘destination’ of virtually the size of France, the world’s top destination in terms of international tourist arrivals. All regions shared in the increase, although to varying degrees. Europe gained more than half of all new arrivals, over 52 million. Asia and Pacific, even though growing at a slower pace but on a much larger base, comes second with an increase of 17 million arrivals.

On the other hand, Pakistan government’s initiatives to fully develop the Marble and Onyx sector by providing relaxation in duties on machinery and new technology and encouragement for scientific methods to compete with the rest of the world; formalization of PASDEC (Pakistan Stone Development Company) and facilities to enter in export market all indicating government’s interest in this sector which is a positive and encouraging gesture for the investors in this industry.

¹ Pakistan Stone Development Company (PASDEC), Report 2017

² United Nations World Tourism Organization’s most current booklet on world tourism 2018 (<http://www.unwto.org/facts/>)

1.2 PROJECT BRIEF

Though nature has gifted Pakistan not only with large deposits, but also with some of the best quality marble, onyx and granite, the marble industry has failed to exploit the real potential. Years of neglect on the part of the successive governments, outdated extraction methods and lack of modern manufacturing facilities have taken their toll on the marble sector which, despite being accorded the status of industry over a decade ago, has not only failed to develop on organized lines, but is also facing a crisis at present though government has taken serious steps in order to boost up this sector.

The proposed project envisages the setup of a Marble and Onyx products manufacturing unit. Marble is largely used by the construction industry, whereas, for furniture and other decorative purposes its tiles and big size cut slabs are also used in flooring of all kinds of buildings i.e. houses for accommodation purposes, mosques, commercial buildings, hotels etc. However, refined and high quality marble is extensively used in handicraft and Kitchen tiling and making of table tops by the furniture industry, whereas, onyx is largely used for the manufacturing of handicrafts mainly for export purposes due to its premium quality and expansiveness.

Multipurpose use of marble and onyx has led to the development of various industries including furniture, construction and handicraft etc. In this pre-feasibility we have confined ourselves to the handicraft industry where both marble and onyx are used for the manufacturing of different articles of decoration i.e. vases, clocks, table lamps, ashtray, chessboard, candle stands, telephone set etc.

For Marble and Onyx Products Manufacturing, stone is obtained by exploding in mountains, then bring them into factories and cut them into various sizes, here after converted into different sizes and shapes, rubbing and polishing is applied in the end to bring shining and smoothness to the handicraft. For this purpose various machines are used i.e. lathe machine, grinders, polishers and etc.

1.3 MARKET ENTRY TIMING

Global demand for marble and onyx products largely depends on the tourism industry around the world. The local industry is export oriented due to low profit margins on such products in the local market. Based on our discussions with the existing players who are exporting such items, Russia is the new emerging market and growing very fast where some cults of catholic Christianity consider onyx a sacred stone. Therefore, Russia may be a permanent market, which has opened to international tourists after the fall of USSR during 80s. Seasonal demand of Marble and Onyx products largely depend on religious and cultural occasions round the world. Its demand increases particularly during New Year's beginning, on religious occasions i.e. Christmas, Valentines Day, during sports events i.e. Football and Cricket World Cups etc.

1.4 PROPOSED BUSINESS LEGAL STATUS

The legal status of business tends to play an important role in any setup; the proposed Marble and Onyx products manufacturing Unit is assumed to operate on Sole Proprietorship basis.

1.5 PROJECT CAPACITY AND RATIONALE

Production capacity of the proposed Marble Onyx products manufacturing unit would be around 20 tons finished handicraft items per month at the beginning of the project. As we have mentioned above paragraphs that the business would be export oriented, a synchronized production plan would be in place in order to cover high freight cost and fully utilize the size of a container, which carries around 20 tons of marble and onyx products. Total annual capacity of the production facility would be around 240-tons at the beginning, which will gradually increase by 3-5% annually. However, as it would be an order based business, demand of the product will highly depend on the marketing and business development efforts of the prospective entrepreneur and is likely to stay at the given capacity provided that proper marketing plan is in place. Participation in international trade fairs and exhibitions, networking with the international and local trade bodies would be instrumental in this business.

1.6 RAW MATERIAL SOURCING

NWFP is the main source of Marble procurement, whereas, Onyx occurs mainly in Baluchistan Chagi District. Onyx is found in different colors i.e. Green Onyx Stone, White Onyx Stone and Multi-colored Onyx etc. There are various stone suppliers in Pakistan, who work either as a stone supplier or have their own quarry lease and excavate themselves. For a marble and onyx products manufacturer there are three options of raw material sourcing:

- 1) Own Quarry
- 2) Buying directly from Quarry
- 3) Buying from open market (stone supplier)

However, there are different aspects to be considered before selecting material procurement options. For quarrying purpose a quarry lease holding and government license would be required which is itself a capital intensive high logistics investment. The option would be suitable if the entrepreneur is planning to work both as a product manufacturer and stone supplier which we would not recommend. Instead it would be suitable to channelize the energy to marketing and business development activities.

Currently, Zafar Zehri, Sky World, Stone World, Indus Marble, SMB Marble and Millat Marble are the major players supplying all kinds of handicraft stone to this industry. Sometimes, large scale manufacturers establish a permanent supply contract with the quarry in order to ensure backward integration of their production operations. Contact details of the suppliers have been provided in the following lines:

Buying directly from a Quarry: Quarry holders generally follow a bidding procedure to sell the stone in the market. Suppliers and manufacturers participate in the bidding process offer the best (or highest) price depending upon the quality of the stone and size. In this process stone bidding price vary according to quality and demand of the stone at that time. Since, most of the manufacturers depend on the availability of order and follow 'make to order' operational procedure, this buying method is most suitable and eliminates the intermediaries thereby minimizes the material cost.

Buying from open market: Dealers and suppliers who are mainly located in Pak Colony and Mangopir, Karachi due to its proximity to Balochistan sell stone in various sizes, shapes and colors from 250 grams to one ton and even bigger depending upon the demand of the buyer. The cut to size stone is priced higher than the quarry justified by reduced wastage ratio.

1.7 PROJECT INVESTMENT

A total of Rs.5.982 million is estimated to be the cost of the project. The working capital requirement is estimated around Rs 2.5 million, out of which Rs. 0.5 million estimated for the expense of advertising and promotion in the foreign market. While Rs 2 million would be the fixed investment.

1.8 PROPOSED PRODUCT MIX

For the purpose of this pre-feasibility, Marble and Onyx products manufacturing process involved producing Handicraft (premium and the main product), Slabs and chips (by product/wastage), product output would be of the following ratio:

| S. No. | Product Name | % age share in Total Production |
|--------|-------------------------|---------------------------------|
| 1 | Marble, Onyx Handicraft | 70% |
| 1-a | Green Onyx | 50% |
| 1-b | White Onyx | 25% |
| 1-c | Multi-colored Onyx | 25% |
| 2 | Marble, Onyx Slabs | 30% |
| | Total | 100% |

LIST OF HANDICRAFT PRODUCTS:

Following handicrafts may be manufactured depending upon the order:

- Flower Vase
- Telephone Sets
- Jar
- Egg / Oval Shapes
- Pyramid
- Ash Tray
- Clocks
- Chess Board
- Animal Shapes
- Lamp
- Candle
- Photo Frame

1.9 RECOMMENDED PROJECT PARAMETERS

| Capacity | Human Resource | Technology/Machinery | Location |
|-------------------------------|----------------|----------------------|--------------------------------|
| Based on 8 working hrs. daily | 12 | Local | Manghopir, Pak Colony, Karachi |
| Financial Summary | | | |
| Project Cost | IRR | NPV | Payback Period |
| Rs. 5.98 million | 48% | 13,437,407 | 3.2 Years |

1.10 PROPOSED LOCATION

Proposed location for setting up a Marble Onyx unit largely depends on the availability of marble and onyx and its transportation to the factory at low cost; however, factors like availability of skilled manpower (which is critical for good quality marble and onyx products), utilities and easy access to the target markets should also be carefully examined. For this pre-feasibility, we propose a location around Karachi somewhere in Hub, Manghopir or Pak Colony. The reason being raw material and skilled manpower is easily available in these areas. Moreover, the potential market for this business in international market, it will be easy to access the ports from these areas.

1.11 KEY SUCCESS FACTORS/PRACTICAL TIPS FOR SUCCESS

Marble and Onyx products manufacturing business is highly dependent on the marketing and business development efforts as most of the business (about 70%) would be generated through exports which depend on the availability of orders from the foreign buyers. Secondly, availability of good quality stone is also critical, based on our discussions with the existing stakeholders it was found that due to obsolete quarrying technology and conventional methods stone quality is always a question mark to the

manufacturers. In the most of the cases, it is expected that stone procured directly from quarry would have fractures inside and hence 50% to 70% would be wastage during cutting and grinding, this is even higher in some cases because no one can predict the quality of stone prima facie. Following are considered to be the key success factors while entering into the business of marble & onyx products manufacturing business:

- Stone judgment capability
- Business development and product marketing
- Pricing and margins given to customer/importer
- Product delivery
- Workers management

Stone judgment capability: The price of marble, granite and onyx is largely governed by the color, pattern, texture, hardness and resistance to environmental change, the size of the rock also results in added value.

Selection of stone is a tricky part of the business and could only be learned through experience. It would be recommended for a new entrant to engage an experienced person while buying stone from the market particularly if going for bidding. It is difficult to differentiate between a fractured and fracture free stone piece and only seasoned eye can reduce the error margin in selection.

Business development and product marketing: Business development and marketing in the foreign market is significantly important for any export business particularly for the said business where an order from the importer is critical. It has been suggested by the existing players that orders procurement from importer without physical presence would not give business a sustainable standing. Therefore, it is suggested that prospective entrepreneur should generate demand through marketing and presence in the foreign markets. For this purpose, he may contact Export Promotion Bureau for the identification of key export markets and participation in trade fairs and exhibitions. Internet may be one of the powerful medium for advertising and promotion. Membership with the FPCCI (Federation of Pakistan Chamber of Commerce & Industry) would also be an advantage to draw close links with the industry and export market. Moreover, capitalizing e-marketing channels like social media; Facebook and Whatsapp, online website, would help to approach international market easily.

Product pricing and on time delivery: These are also important factors particularly when talking about the export market where business runs around clock, any delay may lead to a client back out. With reference to the stone judgment capability, it is even more important and may turn into a thumb sour. Because most of the existing players find it the most difficult part of their business how to decide about product price when there is no surety that the raw material they will purchase would exactly be of the same quality and quantity as it look, whether wastage would be the same they generally assume. All these factors could only be ensured after gaining a good time experience of the industry.

Craftsmanship is the most important element which is gained with extensive experience and most of the craftsmen working in this industry have been associated from the times

of their forefathers. Due to scattered nature of the industry people, tend to work in small setups most of the times with two or three workers on permanent basis. However, large scale setup employee more workers in order to ensure productivity and delivery timelines. It has been observed during market survey that export oriented manufacturing setups have a practice of outsourcing manufacturing and generally avoid to employee large number of full time workers. This practice is a result of two forcing constraints. Firstly, a worker after gaining sufficient experience and expertise prefer to start his own manufacturing because of good income opportunities. Secondly, sellers and exporters work on order basis which is never ensured.

ORDERING AND DELIVERY PROCEDURE

Product order depends on the process adapted by the manufacturer so as the delivery. While going in export market there may be two types of clients: (1) Local traders who procure orders from foreign country and contact the manufacturer for the supply. In such cases trader provides a detailed product specification and order detail to the manufacturer with the delivery time and place. Manufacturer delivers products at the given location (2) Second scenario is the one when manufacturer has his/her own order procurement setup. He/she markets the product directly representing the company generates orders through participation in the foreign trade fairs and exhibitions, personal visits to the whole buyers/direct marketing and through internet marketing. In such instances customer provides the same details as for the local trader. These products are packaged in separate boxes with specification tags and quantities. It should also be ensured that the items fit in boxes to avoid any breakage and damage to the product during transit. Product shipment is made through LC (letter of credit) and your pricing will depend on delivery terms i.e. FOB etc.

2. SECTOR & INDUSTRY ANALYSIS

2.1 DEMAND

Compared to onyx — about 80 per cent of which is used in the manufacturing of handicrafts and the rest in tiles and chips — 80-90 per cent of the marble is used in the construction industry and the rest in the manufacture of handicrafts. While onyx handicrafts primarily target the foreign markets, and buyers, the marble industry enjoyed strong domestic demand due to expansion in new residential and commercial construction activities and change in lifestyle.

However, the absence of modern extraction technology and manufacturing poses a threat to exports which would not pick-up until and unless the local manufacturing meets the strict quality standard in the affluent international markets, they added. It is felt that the real constraint on quarrying and extraction activities — allocation of licenses only to selected few and that too based on political considerations — limits the potential of exploration of reserves and quarry development.

2.2 INTERNATIONAL MARKET

The bulk of export from Pakistan is dominated by onyx handicrafts and much is needed to boost the export of marble tiles and stone. The lack of precision-manufacturing and polishing machinery and an overall disintegration in the industry, at all stages, is the major deterrent to expansion of the export base. Most international trade in marble and onyx is either in the form of finished, cut, ready-to-install blocks, or blocks which are suitable for finishing into cut and dressed stone. Only the more expensive white marble like Mallagori can play a prominent role in the international trade. The bulk of marble trade is conducted with affluent Western Europe and North America.

Italy dominates the international marble trade and is the leading importer of rough blocks and the leading exporter of finished stone. It is also the leading quarrier of marble and travertine (a white or light coloured marble from Tivoli near Rome). Portugal is the second-largest producer of marble, mostly the coloured varieties. The marble processing industry in Pakistan is around 33 years old and the first major marble deposits were discovered at Mallagori and Swabi in the NWFP. In the last 15 years, a number of processing units were set up in the country, the majority of which use locally manufactured machinery.

Just a few years ago, the domestic marble market was dominated by five relatively large players, Indus Marble, Peshawar, and Mustafa Marble, National Marble, Pak-Rock Mining and Habibullah, in Karachi. Except for Habibullah, the rest of the four units have been closed down.

2.3 PROCESSING TECHNOLOGY

The technology used in the cutting and polishing of marble and onyx is basically the same as that used for cutting most other stones, except granite. The latter has a density of nine tons per cubic meter compared to 2.7 tons per cubic meter for marble.

The stone-cutting process consists of fixing the raw stone on a trolley set on four steel columns. A 'gang saw' unit comprising multiple blades, anchored to the columns, cuts the stone into slabs and pieces of prescribed thickness. A 60-blade gang saw produces an average of 59 slabs while the two end pieces are wasted. The shape and size of the slabs vary according to the shape of the original stone.

Though less expensive, the locally manufactured cutting machines have only 40-45 blades which not only fail to perform a precision cutting job resulting in inconsistent thickness, particularly of marble tiles which fail to measure up to international standard, but also have lesser productivity.

2.4 QUALITY AND PRICING

Generally speaking, the purer the chemical composition of the marble the whiter and more expensive it is. There are many varieties of marble and onyx, and certain veined marbles preferred by architects on aesthetic grounds. Size is a major determinant of prices with larger finished products which command higher prices. Four varieties of onyx are produced in Pakistan, the prices of which range from Rs 10,000 to Rs 25,000 per ton, which increases with the darkness of color— light, green being the least and dark green being the most expensive. The prices of the various varieties of marble and onyx fluctuate widely depending on the demand.

Pampokhan and Mallagori marbles are expensive because of their white colour and consistent grain size. Locally, at the retail stage, the marbles are graded into four basic grades: Super, which is the whitest; A; B and C.

2.5 PROBLEM/THREATS TO THE MARBLE AND ONYX SECTOR³

- Primitive, deficient and wasteful mining practices
- Poor processing technology and practices
- Inconsistency of quality of products
- Lack of progressive marketing strategy for international market
- Absence of appropriate & modern technology
- Non-facilitation of large orders placed by importers due to various limitations like lack of warehousing facilities, prevalence of small-scale mining operations, etc
- Use of local equipment and machinery with little or no calibration and high electricity consumption resulting in variation in tile thickness as high as 1 to 2 mm against the international standards of 0.5 mm
- Unskilled work force
- Inability to properly grade products.
- Poor road infrastructure due to which the trucks cannot carry heavy loads on contouring roads in the hilly areas.
- No facility for keeping stocks at processing units or at mines due to financial constraints
- Inappropriate regulatory framework
- High power tariffs

2.6 SUB-SECTOR INFORMATION

MARBLE & ONYX RESERVES AND MINING

Marble is a limestone, which is hard enough to get polished. It is used as construction material for buildings and interiors, and for manufacturing of handicrafts. The finest marble is white and all varieties are composed of crystals of mineral calcite or dolomite,

³ Digest of Industrial Investment in Pakistan, Expert Advisory Cell

which are perfectly white when pure. Black, grey, pink, red, green, and various other kinds of marble are used in buildings and monuments.

Onyx is a fine-grained variety of quartz and the name is derived from the Greek word which means ‘fingernail’ to indicate the sharply contrasting bands of colour in the stone. Onyx is strong and takes a high polish. The colour of onyx marble varies from white to green, red and brown. Much of this soft onyx marble is cut into gemstones, colored and set into inexpensive jewellery. It is also used as a decorative stone in which form it has its major market in Pakistan.

Onyx occurs mainly in Balochistan, Chagi district while marbles of different classification, fossil ferrous limestone, etc. occur in other provinces mainly in NWFP and northern Areas.

Out of 160 million tons of marble reserves estimated in Pakistan.

- 158 million tons are in the NWFP and
- 2 million tons in Balochistan

In Pakistan⁴, there are about 3 billion ton estimated resources of dimension stones for basing mining and processing industries.

Marble and Onyx production in tons⁵

| <i>KPK</i> | <i>Balochistan</i> | <i>Sindh</i> | <i>FATA</i> | <i>Punjab</i> | <i>Total</i> |
|------------|--------------------|--------------|-------------|---------------|--------------|
| 1,700,000 | 1,400,000 | 170,000 | 500,000 | 52500 | 3,822,500 |

In Balochistan, Marble, Onyx and Granite deposits are found in Chagi, Khuzdar, Lasbella, Killa Saifullah, Loralai, Zhob and Ziarat Districts. Onyx is mostly produced in Balochistan whereas, marble is extracted in KPK.

The Provincial Government of Balochistan has established Marble City at Hub for cutting, polishing, and marketing of Marble. The President of Pakistan has granted Rs. 300 million for improvement and up gradation of 20 Marble mines in Balochistan. 364 concessions of large Marble, Onyx, and Granite have been granted. Total known reserves in the province are more than 200 million tons. Variety of colors of large Marble, Onyx, and Granite found in the province are widely accepted in the local and international market due to its similarity with Italian stones, but due to lack of knowledge, expertise and sophisticated machinery, the mineral wealth is being mined on primitive methods and most of it is being wasted. Country’s total export of Marble is about US\$ 7 million which

⁴ PASDEC

⁵ Tarde Development Authority of Pakistan

can be raised upto US\$ 40 million if the large Marble, Onyx and Granite sector is paid due attention.

2.7 EXTRACTION TECHNIQUES

Extraction in Pakistan comprises boring of holes in the bedrock, which are filled with explosives to blast the rock. This results not only in a high, 35 per cent, wastage, but also in smaller stone size which substantially reduces the price which is directly proportional to size. In addition, this also limits the scope of value addition in certain high priced products as table tops, flower vases, table lamps, etc. As the raw stone is sold by weight to the processing companies, whose product size is consequently smaller, it deprives the miners of a substantial amount of money.

The extraction method used in Pakistan is totally opposite to the modern method which consists of drilling holes around the optimal block size and the use of hydraulic jacks and splitting equipment to draw the block out of the bed rock. The block size and shape of the rock are thus more controlled and the wastage is minimized to less than seven per cent.

3. MARKET INFORMATION

There are thousands of small and large scale manufacturing setups working in the industry. Although industry is scattered all over the country, yet, marble & onyx handicrafts manufacturing industry is settled largely in Sindh and particularly in Karachi. Pak Colony, Manghopir, Mehmoodabad and Sohrab Goth are the main locations where both marble tiles and onyx products manufacturing is undertaken. Precise statistics on number of units and their classification is not available as this sector has not been granted as an industry and there is no association or body which represent this sector (though there is an association for marble and granite products manufacturers). A large number of units are just limited to tiles cutting operations and raw stone selling, whereas, finished marble and onyx tiles, marble & onyx handicrafts manufacturers and exporters are also located in these areas.

Based on our discussions with the industry stakeholders overall market of marble and onyx handicrafts (including large sized Urns, fireplaces, statues etc.) is about \$4 million per annum. However, marble and onyx slabs and tiles market is a separate segment, which does not include value added products of onyx. Although there are a number of small scale exporters of marble & onyx products (value added), we have noted the following companies working in formal sector.

- Al-Hamra Handicrafts Karachi
- Pak Onyx Marble
- Dynasty International Karachi
- Azeem Marble and Onyx Industries
- Honest Trading Company Karachi

3.1 MARKET POTENTIAL AND EXPORT⁶

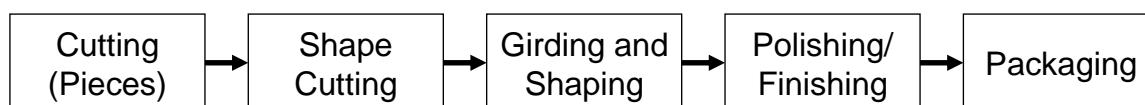
Following table shows the total exports of Pakistan in Marble and Onyx sector. In 2017, total exports of the country remained \$28,122,000. Moreover, exports have been decreasing since 2013 due to various reasons.

Value in US \$ "000"

| Importers | Exported value in 2013 | Exported value in 2014 | Exported value in 2015 | Exported value in 2016 | Exported value in 2017 |
|----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| World | 63112 | 48996 | 44109 | 31030 | 28,122 |
| China | 58432 | 43415 | 39183 | 26819 | 23080 |
| Korea, Republic of | 168 | 411 | 641 | 971 | 999 |
| United Arab Emirates | 215 | 640 | 455 | 375 | 673 |
| Afghanistan | 36 | 263 | 376 | 443 | 555 |
| Qatar | 38 | 98 | 169 | 40 | 549 |
| Italy | 828 | 799 | 544 | 641 | 532 |
| India | 136 | 59 | 182 | 18 | 412 |
| Saudi Arabia | 909 | 1271 | 658 | 715 | 316 |
| Bangladesh | 203 | 55 | 177 | 90 | 216 |
| Lebanon | 444 | 412 | 238 | 139 | 153 |
| Others | 1424 | 1448 | 1337 | 559 | 520 |

www.trademap.org

4. PRODUCTION PROCESS



4.1 MARBLE & ONYX PRODUCTS - PRODUCTION PROCESS

Production process is performed by using stone cutting, shape cutting, grinding and rubbing, polishing and packaging. Cutters, lathe machine, grinders and polishing machines are used for this purpose.

Cutting to Pieces: Obtained stone is brought to factories where it is cut to desired pieces depending upon the product to be made. The stone-cutting process consists of fixing the

⁶ Source: Trade Development Authority of Pakistan

raw stone on a trolley set on four steel columns. A ‘gang saw’ unit comprising multiple blades, anchored to the columns, cuts the stone into pieces of prescribed dimensions.

Shape Cutting: Craftsman fixes the cut piece into the lathe machine and cuts the corners, edges to give it the basic shape of the product which may be round, cylindrical, flat, square or rectangular etc.

Grinding and Rubbing: Hand held and fixed grinders are used to smoothen the shape which is further rubbed to create fineness and delicacy.

Polishing and Finishing: Polishing and finishing machines (both hand held and fixed) are then used to bring desired shine and delicacy.

Packaging: Finished products are packed in corrugated carton boxes in prescribed quantities tactfully with stuffing around in order to keep the product from breakage during transportation. Product specification and quantities tags are then pasted on the box and stored in a safe place.

4.2 RAW MATERIAL REQUIREMENT

For the proposed project initial production would be 12 tons of finished handicraft per month. With expected high rate of wastage as the norm of this industry it has been estimated that around 40 tons of raw onyx and marble would be required monthly to produce 12 tons of finished handicrafts and slabs. Wastage (about 70%) will be used to produce small handicraft items and the rest will be the by products i.e. chips/dana which is used by the construction industry. Breakup of the raw material required for the said facility would be as follows:

| S. No. | Product Name | Finished Product (in tones) | Raw Material | |
|--------|-------------------------|-----------------------------|---------------|------------|
| | | | Qty. in tones | Cost/ Ton |
| 1 | Marble, Onyx Handicraft | 14 | 28 | - |
| 1-a | Green Onyx | 7 | 14 | Rs. 30,000 |
| 1-b | White Onyx | 3.5 | 7 | Rs. 30,000 |
| 1-c | Multi-colored Onyx | 3.5 | 7 | Rs. 12,000 |
| 2 | Marble, Onyx Slabs | 6 | 12 | Rs. 8,000 |
| 3 | Marble Chips (dana) | 20 | - | - |
| | Total | | 40 | |

4.3 MACHINERY REQUIREMENT

Both local and imported machinery can be used for the manufacturing of marble and onyx products and handicrafts. As quality of the product largely depends on the expertise and art of the craftsman, local machinery reportedly gives sound quality output. Following machinery will be required for setting up a Marble and Onyx products manufacturing Unit:

| S. No | Machine | No. of Units | Total Cost in Rs. |
|-------|-----------------------|--------------|-------------------|
| 1 | Cutter (36") | 1 | 1,000,000 |
| 2 | Lathe Machine (60") | 4 | 800,000 |
| 3 | Grinder (Hand Held) | 4 | 700,000 |
| 4 | Polisher (with stand) | 1 | 250,000 |
| 5 | Pumps and motors | - | 250,000 |
| 6 | Erection | - | 100,000 |
| | Total | | 3,100,000 |

There are many local suppliers of Marble and Onyx machinery working in Karachi (Shershah, Pak Colony and Manghopir) and other cities, who could be contacted for obtaining machinery.

4.4 PLANT AND MACHINERY MAINTENANCE

Machinery is expected to be repaired and maintained on an annual basis. During the projection period, maintenance expenses are estimated to be around 3% of the total cost of machine.

5. LAND & BUILDING REQUIREMENT

5.1 SITE DEVELOPMENT

The Marble and Onyx Products manufacturing project is estimated to require a total area of 500-600 yards plot. This area will be used for setting up the Production facility, storage and office. Since machinery and vehicles which is used for the transportation of large sized heavy stone and its cutting, there will be a further requirement for vehicles parking.

5.2 LAND & BUILDING REQUIREMENTS FOR MARBLE & ONYX FACTORY

Land and building requirements for the Marble & Onyx factory would be as follows:

| Details | Size/Area (Sq. Ft.) | Renovation Cost/Sq. Ft. | Total Renovation Cost |
|---|---------------------|-------------------------|-----------------------|
| Production facility | 5,000 | - | - |
| Including | | | |
| <i>Storage Area – Raw material</i> | | | |
| <i>Finished Products</i> | | | |
| <i>Machinery & other installed equipments</i> | | | |
| Factory Office | 150 | 300 | 60,000 |
| Other Services (water plant, tool shop etc.) | 50 | 400 | 20,000 |
| Total Covered Area | 5,200 | | 80,000 |

Note: Factory construction, land costs and the rental values are subjected to the site location, therefore could vary as the location would change

As per discussion with market experts, 5000 Sq. ft area is sufficient for the production facility. The factory would be located at Manghopir road, Karachi. The reason for the selection is that utilities, water, electricity and skilled manpower are conveniently available, whereas, its proximity to the target market, good transport and communication facilities, and being a business center of the region also account for its selection.

6. HUMAN RESOURCE REQUIREMENT

Marble and Onyx industry is a highly specialized and skilled labor industry. A total of 13 persons will be required to handle the production operations of a Marble & Onyx Products manufacturing unit. The business unit will work on one shift basis (8 hours daily). Technical staff with relevant experience will be required for operating machines. Total approximate manpower requirement for the business operations along with the respective salaries are given in the table below:

| (Pak. Rs.) | | | |
|---|---------------|----------------|------------------|
| Staff Title | No of Persons | Monthly Salary | Annual Salary |
| 1. Business Unit Manager/Owner | | | |
| Production Staff (Marble & Onyx Factory) | | | |
| 2. Cutting Machine Operator | 1 | 20,000 | 240,000 |
| 3. Lathe Machine Operator | 4 | 80,000 | 960,000 |
| 4. Grinder Operator | 4 | 80,000 | 960,000 |
| 5. Helper/Laborer | 1 | 17,500 | 210,000 |
| 6. Crushing Incharge /Plant Operator | 1 | 17,500 | 210,000 |
| Total Production Staff | 11 | 217,500 | 2,610,000 |
| General Administration/ Selling Staff | | | |
| 7. Admin & Accounts Officer | 1 | 40,000 | 480,000 |
| Total G A /S Staff | 1 | 40,000 | 480,000 |
| TOTAL | 12 | 257,500 | 3,090,000 |

6.1 Experience Requirement for the Staff

Machinery and vehicle operations involved at a Marble & Onyx Production site are of a very technical sort; therefore, it is proposed that Lathe Machine Operator, Grinder Operator and other related staff should be with minimum of two to three years experience of the same type of operations. One to two year of Polish Machine operation experience on polish machinery would be necessary for the person who will perform the finishing of products.

7. FINANCIAL ANALYSIS & KEY ASSUMPTIONS

The project cost estimates for the proposed “Marble and Onyx Products Manufacturing Business” have been formulated on the basis of discussions with industry stakeholders and experts. The projections cover the cost of land, machinery and equipment including office equipment, fixtures etc. Assumptions regarding machinery have also been

provided, however, the specific assumptions relating to individual cost components are given as under.

7.1 LAND & BUILDING

Land for setting up the proposed Marble & Onyx Products Manufacturing unit would be on which rent will be around Rs. 50,000 per month for a 500 yards plot at the location of Manghopir. It has been assumed that it would be a developed land with basic infrastructure available. However, for the necessary renovation and customization of the facility Rs. 80,000/- will be required, which has been assumed to be depreciating at 10% per annum using diminishing balance method.

7.2 OVERALL FACTORY & OFFICE RENOVATION

To renovate the factory / office premises in Year 5 and Year 10 a cost would incur for which an amount equivalent to 5% of the total factory/office construction cost is estimated.

7.3 FACTORY / OFFICE FURNITURE

A lump sum provision of Rs. 100,000 for procurement of office/factory furniture is assumed. This would include table, desk, chairs, and office stationery. The breakup of Factory Office Furniture & Fixtures is as follows:

| Item | Number | Total Cost |
|---|--------|----------------|
| Table & Chair for Owner | 1 | 15,000 |
| Tables & Chairs for Admin. Staff | 1 | 10,000 |
| Waiting Chairs | 4 | 8,000 |
| Curtains & Interior Decoration for office | - | 15,000 |
| Chairs for Workers/Labor | 5 | 10,000 |
| Electrical Fittings & Lights | - | 30,000 |
| Others | - | 12,000 |
| Total | | 100,000 |

7.4 DEPRECIATION TREATMENT

The treatment of depreciation would be on a diminishing balance method at the rate of 10% per annum on the following. The method is also expected to provide accurate tax treatment.

1. Machinery
2. Land & Building Construction and Renovation
3. Furniture and Fixtures etc.

7.5 UTILITIES

Marble & Onyx Production facility will be operated using electricity for production purposes, this would draw considerable amount of electricity. The cost of the utilities including electricity, telephone, and water is estimated to be around Rs. 1,560,000/- per annum, out of which Electricity would be the major portion which separately will cost around Rs. 1,200,000/- per annum. Approximate cost of utilities has been given below:

| Utility | Total Monthly Cost (Rs.) | Total Annual Cost (Rs.) | Annual %age Increase |
|--|--------------------------|-------------------------|----------------------|
| 1. Electricity | 100,000 | 1,200,000 | 5% |
| 2. Gas or Furnace Oil, Lubricants etc. | 15,000 | 180,000 | 3% |
| 3. Water | 10,000 | 120,000 | 5% |
| 4. Telephone | 5,000 | 60,000 | 5% |
| Total | 130,000 | 1,560,000 | |

7.6 WORKING CAPITAL REQUIREMENTS

It is estimated that an additional amount of two million fifty-lac rupees (approximately) will be required as cash in hand to meet the working capital requirements. Out of these major expense related with Advertisement Expense, because revenue of this sector based on Advertisement. These provisions have been estimated based on the following assumptions for the proposed business.

| Description | Amount in Rs. |
|---|------------------|
| First Three Months Salaries (Production staff) | 652,500 |
| First Three Months Utilities Charges | 390,000 |
| First Three Months Rent | 150,000 |
| Advertisement Expense – Conference & Exhibition | 500,000 |
| Raw Material | 810,000 |
| Total | 2,502,500 |

7.7 MACHINERY INSTALLATION

Machinery installation and trial run expenses are assumed to be around Rs. 100,000/-.

7.8 SELLING & DISTRIBUTION EXPENSES

For the purpose of this pre-feasibility, it has been assumed that the Marble & Onyx products manufacturer would mainly be engaged in exports, however, to cover the printing cost of promotion material and selling expenses a provision of selling and distribution expenses has been assumed which will cost around 2% of the annual sales.

7.9 MISCELLANEOUS EXPENSES

Miscellaneous expenses of running the business are assumed to be Rs. 100,000 per year. These expenses include various items like office stationery, daily consumables, traveling allowances etc. and are assumed to increase at a nominal rate of 10% annually.

7.10 RAW MATERIAL INVENTORY

Based on our assumptions for the production facility, orders and availability of desired material, it would be necessary to maintain 40 tons raw stone (equivalent to one month stone requirement) in order to cover any urgent order requirement. It is also expected that green onyx products are demanded more frequently, therefore, inventory will be maintained in that color.

7.11 FINISHED GOODS INVENTORY

The proposed setup is assumed to maintain finished goods inventory to meet urgent order supplies, display sampling and exhibitions. For this purpose finished products equivalent to 3 tonne finished product would be maintained. This would comprise of most demanded product categories i.e. animals, chessboards, jewelry box, vases, urns etc. in all three shades of onyx.

7.12 REVENUE PROJECTIONS

Initial production has been assumed to be 12 tons of export quality finished handicrafts and marble/onyx slabs which will generate monthly revenue around US \$ 40,000. For the projection purpose annual revenue growth rate of 5% has been assumed which would cover anticipated growth in the industry as well price. Based on our discussions with the industry experts and entrepreneurs it is anticipated that the sales price will vary according to location and occasion. Therefore, most precise sales price and growth is not possible to estimate.

7.13 ACCOUNTS RECEIVABLES

Considering the industry norm, particular to the Marble and Onyx sector, it has been assumed that 70% of the sales will be on cash. Whereas, remaining 30% sales will be on credit to traders and suppliers. A collection period of 60 days is assumed for the credit sales.

All of the above assumptions are based on our findings during the discussions with the industry experts and stakeholders. A provision for bad debts has been assumed equivalent to 2% of the annual credit sales.

7.14 TAXATION

Tax rate applicable to private limited company of SME sector has been applied which is 20%.

7.15 COST OF CAPITAL

AS this model is based on 0:100 debt to equity ratio. So, there would be no cost of capital.

7.16 OWNER'S WITHDRAWAL

It is assumed that the owner will draw funds from the business once the desired profitability is reached from the start of operations. The amount would depend on business sustainability and availability of funds for future growth.

| | |
|---------|-------------------------------|
| 7.20 | ANNEXURES |
| 7. 20.1 | Summary of Key Assumptions |
| 7. 20.2 | Cost and Revenue Sheet |
| 7. 20.3 | Projected Income Statement |
| 7. 20.4 | Projected Balance Sheet |
| 7. 20.5 | Projected Cash Flow Statement |

Machinery Suppliers**Machinery Supplier -1**

| | | | |
|---------------------------------------|---|------------|--|
| Name of Supplier /Organization | Xiamen Moscut Stone Machine CO. LTD | | |
| Address | Hailian Industrial Park, ShuiTou Town, Nan'An City, Fujian province China | | |
| Phone | +86-158-609301366 | Fax | |
| E-mail | Chenxuelin2007@hotmail.com | | |
| Website | www.moscut.com | | |

Machinery Supplier -2

| | | | |
|---------------------------------------|--|------------|--------------|
| Name of Supplier /Organization | Ashraf Engineering Works Pvt LTD | | |
| Address | 2-New G.T Road Shahdra, Lahore, Punjab, Pakistan | | |
| Phone | 9242-7920477 | Fax | 9242-7922293 |

Machinery Supplier -3

| | | | |
|---------------------------------------|--|------------|-------------|
| Name of Supplier /Organization | Ahabab Associates | | |
| Address | 174, sector 30, Korangi Industrial Area, Karachi-74900, Pakistan | | |
| Phone | 021 35065379 | Fax | 021 3506998 |
| E-mail | info@ahbab.com.pk | | |
| Website | http://www.ahbab.com.pk | | |

Raw Material Suppliers**Raw Material Supplier -1**

| | | | |
|---------------------------------------|---|------------|--|
| Name of Supplier /Organization | Millat Marble | | |
| Address | Nusrat Bhutto Colony Deh Mangopir Road, Karachi, Pakistan | | |
| Phone | +92 312 345 8989 | Fax | |
| E-mail | info@millatmarble.com | | |
| Website | www.millatmarble.com | | |

Raw Material Supplier -2

| | | | |
|---------------------------------------|--|------------|--|
| Name of Supplier /Organization | Stone World | | |
| Address | C-20/2, K.D.A. Scheme No. 5, Block 4 Clifton Karachi-75600, Pakistan | | |
| Phone | 021-35878171 – 75 | Fax | |

Raw Material Supplier -3

| | | | |
|---------------------------------------|--|------------|---------------|
| Name of Supplier /Organization | Hanam Marbles Industries | | |
| Address | 1D- 25/26, Block 2, Qasba Metrovile, Mangopir Road, Karachi, Pakistan. | | |
| Phone | 92-21-6659357 | Fax | 92-21-6659369 |
| E-mail | hanam@cyber.net.pk | | |
| Website | www.hanammarbles.com | | |

| Summary of Key Assumptions | |
|--|--------------------|
| (in Pak. Rs.) | |
| PARTICULARS | TOTAL COST/DETAILS |
| Fixed Capital | |
| Plant & machinery | 3,200,000 |
| Production Plant - Cutter, Lathe Machine, Grinder & Polish Machine | 2,500,000 |
| Pumps & Motors and other support Machine tools | 600,000 |
| Machinery Installation & trial run expenses | 100,000 |
| Construction & Renovation | 80,000 |
| Factory / Office Furniture | 100,000 |
| Preliminary Expenses | 100,000 |
| Total Fixed Capital | 3,480,000 |
| Working Capital | |
| Utilities - Three Months (Office & Factory) | 390,000 |
| 1. Electricity/Month | 100,000 |
| 3. Furnace Oil and Lubricants/Month | 25,000 |
| 4. Telephone/Internet/Fax/Month | 5,000 |
| Salaries - Three Months (Production Staff) | 652,500 |
| Advertisement Expense - Conference & Exhibitions | 500,000 |
| Raw Material Inventory | 810,000 |
| Rent (3 months) | 150,000 |
| Total Working Capital | 2,502,500 |
| TOTAL PROJECT COST | 5,982,500 |
| Equity Financing | 5,982,500 |
| Debt:Equity Ratio (0:100) | 0.00% |
| PROJECT RETURNS AND OTHER FINANCIAL | |
| IRR | 48% |
| NPV | 13,437,407 |
| Payback Period (Years) | 3 Years |
| Debt Equity Ratio | 0:100 |
| Cost of finance | 0% |
| OTHER ASSUMPTIONS | |
| Depreciation | 10% |
| Machinery Annual Repair & Maintenance (as %age of total cost of Machinery) | 3.00% |
| Selling & Distribution Expenses | 2.00% |
| INCREASE IN PRICE AND GROWTH | |
| Factory Operations and Capacity Utilisation Assumptions | |
| Increase in Production (Annual) | 2% |
| Annual sales price increase | 7% |
| Operational Hrs./day | 8 |
| Operational Days / Month | 22 |
| Operational Months | 12 |
| Annual Operational Days | 264 |
| Economy related assumptions | |
| Electricity charges growth rate | 5% |
| Increase in Salaries | 10% |
| Increase in Misc. Expenses | 10% |
| Tax Rate | 20% |
| Cash Flow Assumptions | |
| Sales on Credit - as %age of total | 30% |
| Sales on Cash - as %age of total | 70% |
| Accounts Receivable period (months) - only for 30% credit sales | 2 |
| Provision for bad debts (only on 30% credit sales) | 2% |
| Raw Material Inventory - Stone (Days) | 30 |
| Finished Goods Inventory (Days) | 7 |

MARBLE & ONYX PRODUCTION BUSINESS

COST AND REVENUE SHEET

1. REVENUE CALCULATION

Monthly Production

| Product Category | Quantity (in Tonne) | Sales Price / Tonne | Total Sales Price |
|---|---------------------|---------------------|-----------------------|
| Green Onyx | 7 | 102,600 | 718,200 |
| White Onyx | 3.5 | 102,600 | 359,100 |
| Multi-colored Onyx | 3.5 | 63,720 | 223,020 |
| Marble, Onyx Slabs | 6 | 55,080 | 330,480 |
| Marble Chips (dana) - By Product | 20 | 3,500 | 70,000 |
| | | | 1,700,800 |
| Total Revenue (Monthly) | | | 1,700,800 Rs. |
| Gross Annual Sales | | | 20,409,600 Rs. |
| Provision for Finished Goods Inventory | | | 7 Days |
| Estimated Finished Goods Inventory at the end of the Year | | | 396,853 Rs |
| Total Realised Gross Annual Sales | | | 20,409,600 Rs. |

2. COST CALCULATION

Raw Material Required for monthly production

| Product Category | % age share in Total Production | Raw Material Required (in tonnes) | Wastage | Finished Product (in tonnes) |
|-------------------------|---------------------------------|-----------------------------------|---------|------------------------------|
| Marble, Onyx Handicraft | 70% | 28 | 50% | 14 |
| Green Onyx | 50% | 14 | 50% | 7 |
| White Onyx | 25% | 7 | 50% | 3.5 |
| Multi-colored Onyx | 25% | 7 | 50% | 3.5 |
| Marble, Onyx Slabs | 30% | 12 | 50% | 6 |
| Marble Chips (dana) | | | | 20 |
| Wastage | | | | 20 |
| Total | 100% | 40 | | 40 |

| Product Category | Quantity / Tonne | Cost / Tonne | Total Cost |
|------------------------------|------------------|--------------|------------------------------|
| Green Onyx | 14 | 30,000 | 420,000 |
| White Onyx | 7 | 30,000 | 210,000 |
| Multi-colored Onyx | 7 | 12,000 | 84,000 |
| Marble, Onyx Slabs | 12 | 8,000 | 96,000 |
| Raw Material Cost | | | 810,000 Rs. / month |
| Labour Cost | | | 217,500 Rs. / month |
| Electricity Charges | | | 100,000 Rs. / month |
| Polishing Material | | | 50,000 Rs. / month |
| Total Production Cost | | | 1,177,500 Rs. / month |

Annual Cost of Production

| | | |
|--|-------------------|-------------------------------|
| Raw Material Cost | - | 9,720,000 Rs. / annum |
| Labour Cost | | 2,610,000 Rs. / annum |
| Electricity Charges | | 1,200,000 Rs. / annum |
| Polishing Material | | 600,000 Rs. / annum |
| TOTAL ANNUAL COST OF PRODUCTION | | 14,130,000 Rs. / annum |
| Total Annual Sales | 20,409,600 | Difference |
| Total Annual Cost | 14,130,000 | 6,279,600 |

| MARBLE & ONYX PRODUCTION BUSINESS | | | | | | | | | | |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Projected Income Statement (Rs.) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| Net (Adjusted Sales) | 19,892,670 | 22,213,614 | 24,295,720 | 26,516,829 | 28,940,952 | 31,586,644 | 34,474,155 | 37,625,588 | 41,065,063 | 44,818,909 |
| Cost of Sales | 17,100,000 | 17,661,600 | 18,255,852 | 18,885,524 | 19,553,650 | 20,263,554 | 21,018,884 | 21,823,636 | 22,682,198 | 23,599,380 |
| Cost of Production | 14,130,000 | 14,412,600 | 14,700,852 | 14,994,869 | 15,294,766 | 15,600,662 | 15,912,675 | 16,230,928 | 16,555,547 | 16,886,658 |
| Labor (Production Staff) | 2,610,000 | 2,871,000 | 3,158,100 | 3,473,910 | 3,821,301 | 4,203,431 | 4,623,774 | 5,086,152 | 5,594,767 | 6,154,243 |
| Other Utilities | 360,000 | 378,000 | 396,900 | 416,745 | 437,582 | 459,461 | 482,434 | 506,556 | 531,884 | 558,478 |
| Gross Profit | 2,792,670 | 4,552,014 | 6,039,868 | 7,631,305 | 9,387,303 | 11,323,090 | 13,455,271 | 15,801,951 | 18,382,866 | 21,219,529 |
| Gross Profit Margin | 14% | 20% | 25% | 29% | 32% | 36% | 39% | 42% | 45% | 47% |
| General Administrative & Selling Expenses | | | | | | | | | | |
| Salaries | 480,000 | 528,000 | 580,800 | 638,880 | 702,768 | 773,045 | 850,349 | 935,384 | 1,028,923 | 1,131,815 |
| Factory/Office Rent | 600,000 | 660,000 | 726,000 | 798,600 | 878,460 | 966,306 | 1,062,937 | 1,169,230 | 1,286,153 | 1,414,769 |
| Amortization of Preliminary Expenses | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | - | - | - | - | - |
| Depreciation Expense | 338,000 | 304,200 | 273,780 | 246,402 | 221,762 | 199,986 | 179,987 | 161,988 | 145,790 | 131,211 |
| Maintenance Expense | 96,000 | 96,000 | 96,000 | 96,000 | 96,000 | 96,000 | 96,000 | 96,000 | 96,000 | 96,000 |
| Advertisement Expense | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 |
| Selling & Distribution | 397,853 | 444,272 | 485,914 | 530,337 | 578,819 | 631,733 | 689,483 | 752,512 | 821,301 | 896,378 |
| Subtotal | 2,431,853 | 2,552,472 | 2,682,494 | 2,830,219 | 2,997,809 | 3,167,069 | 3,378,756 | 3,615,115 | 3,878,167 | 4,170,172 |
| Operating Income | 360,817 | 1,999,541 | 3,357,374 | 4,801,087 | 6,389,494 | 8,156,020 | 10,076,515 | 12,186,837 | 14,504,699 | 17,049,357 |
| Earnings Before Taxes | 360,817 | 1,999,541 | 3,357,374 | 4,801,087 | 6,389,494 | 8,156,020 | 10,076,515 | 12,186,837 | 14,504,699 | 17,049,357 |
| Tax | 72,163 | 399,908 | 671,475 | 960,217 | 1,277,899 | 1,631,204 | 2,015,303 | 2,437,367 | 2,900,940 | 3,409,871 |
| Net Profit | 288,653 | 1,599,633 | 2,685,899 | 3,840,869 | 5,111,595 | 6,524,816 | 8,061,212 | 9,749,469 | 11,603,759 | 13,639,486 |
| Monthly Profit After Tax | 24,054 | 133,303 | 223,825 | 320,072 | 425,966 | 543,735 | 671,768 | 812,456 | 966,980 | 1,136,624 |

| MARBLE & ONYX PRODUCTION BUSINESS | | | | | | | | | | | |
|---------------------------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Projected Balance Sheet (Rs.) | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| Assets | | | | | | | | | | | |
| Current Assets | | | | | | | | | | | |
| Cash & Bank Balance | 1,692,500 | 74,163 | 1,102,978 | 3,139,276 | 6,194,821 | 10,380,817 | 14,929,600 | 19,981,004 | 26,187,670 | 33,716,100 | 42,743,898 |
| Raw Material Inventory | 810,000 | 1,177,500 | 1,201,050 | 1,225,071 | 1,249,572 | 1,274,564 | 1,300,055 | 1,326,056 | 1,352,577 | 1,379,629 | 1,407,221 |
| Finished Goods Inventory | 0 | 396,853 | 458,277 | 473,533 | 489,702 | 506,865 | 525,109 | 544,527 | 565,226 | 587,319 | 610,933 |
| Accounts Receivable | 0 | 1,000,637 | 1,110,681 | 1,214,786 | 1,325,841 | 1,447,048 | 1,579,332 | 1,723,708 | 1,881,279 | 2,053,253 | 2,240,945 |
| Total Current Assets | 2,502,500 | 2,649,153 | 3,872,986 | 6,052,666 | 9,259,937 | 13,609,294 | 18,334,096 | 23,575,295 | 29,986,753 | 37,736,301 | 47,002,997 |
| Fixed Assets | | | | | | | | | | | |
| Plant Machinery & Facility | 3,200,000 | 2,880,000 | 2,592,000 | 2,332,800 | 2,099,520 | 1,889,568 | 1,700,611 | 1,530,550 | 1,377,495 | 1,239,746 | 1,115,771 |
| Factory Construction | 80,000 | 72,000 | 64,800 | 58,320 | 52,488 | 51,239 | 46,115 | 41,504 | 37,353 | 33,618 | 34,256 |
| Furniture & Fixtures | 100,000 | 90,000 | 81,000 | 72,900 | 65,610 | 59,049 | 53,144 | 47,830 | 43,047 | 38,742 | 34,868 |
| Vehicle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Fixed Assets | 3,380,000 | 3,042,000 | 2,737,800 | 2,464,020 | 2,217,618 | 1,999,856 | 1,799,871 | 1,619,884 | 1,457,895 | 1,312,106 | 1,184,895 |
| Intangible Assets | | | | | | | | | | | |
| Preliminary Expenses | 100,000 | 80,000 | 60,000 | 40,000 | 20,000 | - | - | - | - | - | - |
| Total Assets | 5,982,500 | 5,771,153 | 6,670,786 | 8,556,686 | 11,497,555 | 15,609,150 | 20,133,966 | 25,195,178 | 31,444,648 | 39,048,407 | 48,187,893 |
| Owner's Equity | 5,982,500 | 5,771,153 | 6,670,786 | 8,556,686 | 11,497,555 | 15,609,150 | 20,133,966 | 25,195,178 | 31,444,648 | 39,048,407 | 48,187,893 |
| Long Term Liability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Equity & Liabilities | 5,982,500 | 5,771,153 | 6,670,786 | 8,556,686 | 11,497,555 | 15,609,150 | 20,133,966 | 25,195,178 | 31,444,648 | 39,048,407 | 48,187,893 |

| MARBLE & ONYX PRODUCTION BUSINESS | | | | | | | | | | | |
|--|--------------------|--------------------|------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Projected Statement of Cash Flows (Rs.) | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| Cash Flow From Operating Activities | | | | | | | | | | | |
| Net Profit | 0 | 288,653 | 1,599,633 | 2,685,899 | 3,840,869 | 5,111,595 | 6,524,816 | 8,061,212 | 9,749,469 | 11,603,759 | 13,639,486 |
| Add: Depreciation Expense | 0 | 338,000 | 304,200 | 273,780 | 246,402 | 221,762 | 199,986 | 179,987 | 161,988 | 145,790 | 131,211 |
| Amortization Expense | 0 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | - | - | - | - | - |
| (Increase) / decrease in Receivables | - | (1,000,637) | (110,043) | (104,105) | (111,055) | (121,206) | (132,285) | (144,376) | (157,572) | (171,974) | (187,692) |
| (Increase) / decrease in RM | - | (367,500) | (23,550) | (24,021) | (24,501) | (24,991) | (25,491) | (26,001) | (26,521) | (27,052) | (27,593) |
| (Increase) / decrease in FG Inventory | - | (396,853) | (61,424) | (15,256) | (16,170) | (17,163) | (18,243) | (19,419) | (20,699) | (22,093) | (23,614) |
| Net Cash Flow From Operations | 0 | (1,118,337) | 1,728,816 | 2,836,297 | 3,955,545 | 5,189,996 | 6,548,783 | 8,051,404 | 9,706,666 | 11,528,430 | 13,531,797 |
| Cash Flow From Financing Activities | | | | | | | | | | | |
| Receipt of Long Term Debt | 0 | | | | | | | | | | |
| Repayment of Long Term Debt | | | | | | | | | | | |
| Owner's Equity | 5,982,500 | (500,000) | (700,000) | (800,000) | (900,000) | (1,000,000) | (2,000,000) | (3,000,000) | (3,500,000) | (4,000,000) | (4,500,000) |
| Net Cash Flow From Financing Activities | 5,982,500 | (500,000) | (700,000) | (800,000) | (900,000) | (1,000,000) | (2,000,000) | (3,000,000) | (3,500,000) | (4,000,000) | (4,500,000) |
| Cash Flow From Investing Activities | | | | | | | | | | | |
| Capital Expenditure | (3,200,000) | | | | | (4,000) | | | | | (4,000) |
| Factory/Office Furniture | (100,000) | | | | | | | | | | |
| Preliminary Operating Expenses | (100,000) | | | | | | | | | | |
| Purchase of Raw Material Inventory | (810,000) | | | | | | | | | | |
| Purchase of Land | (80,000) | | | | | | | | | | |
| Net Cash Flow From Investing Activities | (4,290,000) | 0 | 0 | 0 | 0 | (4,000) | 0 | 0 | 0 | 0 | (4,000) |
| NET CASH FLOW | 1,692,500 | (1,618,337) | 1,028,816 | 2,036,297 | 3,055,545 | 4,185,996 | 4,548,783 | 5,051,404 | 6,206,666 | 7,528,430 | 9,027,797 |
| Cash at the Beginning of the Period | 0 | 1,692,500 | 74,163 | 1,102,978 | 3,139,276 | 6,194,821 | 10,380,817 | 14,929,600 | 19,981,004 | 26,187,670 | 33,716,100 |
| Cash at the End of the Period | 1,692,500 | 74,163 | 1,102,978 | 3,139,276 | 6,194,821 | 10,380,817 | 14,929,600 | 19,981,004 | 26,187,670 | 33,716,100 | 42,743,898 |

Small and Medium Enterprises Development Authority

HEAD OFFICE

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