



Pre-Feasibility Study (Seed Oil Extraction Unit)



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

www.smeda.org.pk

HEAD OFFICE

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

REGIONAL OFFICE Punjab

3rd 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

REGIONAL OFFICE Sindh

5th Floor, Bahria
Complex II, M.T. Khan Road,
Karachi.
Tel: (021) 111-111-456
Fax: (021) 35610572
helpdesk-khi@smeda.org.pk

REGIONAL OFFICE Khyber Pakhtunkhwa

Ground Floor
State Life Building
The Mall, Peshawar.
Tel: (091) 111-111-456
Fax: (091) 5286908
helpdesk-pew@smeda.org.pk

REGIONAL OFFICE Balochistan

Bungalow No. 15-A
Chaman Housing Scheme
Airport Road, Quetta.
Tel: (081) 2831623, 2831702
Fax: (081) 2831922
helpdesk-qta@smeda.org.pk

Note: All SMEDA Services / information related to PM's Youth Business Loan are Free of Cost

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1. DISCLAIMER

The purpose and scope of this information memorandum is to introduce the subject matter and provide a general idea and information on the subject. 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 is in no manner an alternate to the professional advice on the subject matter. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information he / she feels necessary for making an informed decision apart from taking professional advice from a qualified consultant/technical expert before taking any decision to act upon the information.

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2. 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, production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in Seed Oil Extraction Unit by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and 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.

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 hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to 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. INTRODUCTION TO SCHEME

Prime Minister's Youth Business Loan for young entrepreneurs, with an allocated budget of Rs. 5.0 Billion for the year 2013-14, is designed to provide subsidised financing at 8% mark-up per annum for one hundred thousand (100,000) beneficiaries,

through designated financial institutions, initially by National Bank of Pakistan (NBP) and First Women Bank Ltd. (FWBL).

Loans from Rs. 0.1 million to Rs. 2.0 million with tenure up to 8 years inclusive of 1 year grace period, and a debt: equity of 90: 10 will be disbursed to SME beneficiaries across Pakistan, covering; Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, Gilgit Baltistan, Azad Jammu & Kashmir and Federally Administered Tribal Areas (FATA).

5. EXECUTIVE SUMMARY

Seed Oil Extraction Unit is proposed to be established in cultivated areas for potential seeds used for oil extraction, preferably in the regions of Balochistan e.g. Sibi, Naseer Abad & Jaffarabad - Punjab e.g. DG Khan, Rahim Yar Khan, Sadiqabad & Multan etc. – Sindh e.g. Khairpur, Gothki, Sukkar & N. Feroz etc. and KPK e.g. Abbotabad, Buner & D.I.Khan etc. The oil will be sold to refineries for use in further processing. The oil has escalating demand in Pakistan. Edible oil is used in stir-fry dishes, snack foods, seafood, vegetables and different foods. It can be used in place of any vegetable oil.

The project can be used for Canola, Sunflower and Rapeseed etc., however, keeping in view the resource availability, cost and demand factors of Rapeseed, the same is proposed for the unit.

The plant has an installed capacity to process seeds of approximately 192,000 kg per annum however, for the purpose of calculations, 50% capacity utilization has been assumed for the first year of operations which is proposed to grow at the rate of 5% up to a maximum 80%, assuming an 8 hour shift and 320 operational days per year. Processing of seeds yields crude seed oil as the main product and residual cake and waste as by-products. It is crucial for the project, that clean and hygienic environment be maintained for quality assurance.

Total project cost estimated for the seed oil processing unit is Rs. 1.9 million, including, fixed investment of Rs. 0.89 million and working capital of Rs. 1.0 million. Given the cost assumptions, IRR and payback period are 37% and 3.72 years respectively.

6. BRIEF DESCRIPTION OF PROJECT & PRODUCT

- **Location:** The project is proposed to be established in cultivated areas of Balochistan e.g. Sibi, Naseer Abad & Jaffarabad - Punjab e.g. DG Khan, Rahim Yar Khan, Sadiqabad & Multan etc. – Sindh e.g. Khairpur, Gothki, Sukkar & N. Feroz etc. and KPK e.g. Abbotabad, Buner & D.I.Khan etc.
- **Product:** The proposed final product will be crude seed oil, extracted from Rapeseed, which can be sold to oil refineries / mills for producing edible oil. Additional by-products obtained from the process are residual cake (hulls & meal) and waste.
- **Target Market:** Target customers for the proposed product primarily, include oil refineries / mills for crude seed oil and individuals, wholesalers & retailers for the by-product i.e. Residual Cake.
- **Employment Generation:** The proposed project will provide direct employment to 5 people, including the entrepreneur. Financial analysis shows the unit shall be profitable from the very first year of its operations.

7. CRITICAL FACTORS IN DECISION MAKING

- Careful processing techniques must be used to avoid any damages to the extracted crude seed oil.
- Seed quality and availability is a critical factor, depending upon of harvesting seasons and quality of crops; poor harvest may result in low quality seeds, thereby leading to poor quality of the end product i.e. crude seed oil.
- The project infrastructure must be designed keeping in view possible extension and product diversification into oil / ghee industry, poultry feed mills, soap and sweets / candies manufacturing factories.
- Processing line must be clean and hygienic as per internationally accepted industry standards.
- It is recommended that the proposed project be established in a rented building to reduce project cost. Selection of proper location, equipment and staff is also a pre-requisite for running the project successfully.

8. INSTALLED & OPERATIONAL CAPACITIES

The installed capacity of the proposed project is assumed to be 192,000 kg seeds processed on annual basis. However, to ensure project rationality, it has been assumed that the project will begin with 50% capacity utilization, which will increase by 5% every year up to a maximum of 80%. Therefore, assuming 320 working days a year, and 8

hour shifts per day, processing capacity of the unit is 96,000 kg in the first year of operations. Furthermore, it has been assumed that of the total quantity processed, 33% will result in crude seed oil, 65% in residual cake and 2% in waste production.

9. GEOGRAPHICAL POTENTIAL FOR INVESTMENT

As per Economic Survey of Pakistan 2012-13, the major oilseed crops of Pakistan include sunflower, canola, rapeseed / mustard and cottonseed. The total seed oil produce in 2012-13 has been reported to be 0.61 Million tons. During the year 2012-13 (July-March), 1.74 Million tons of edible oil, valued at Rs. 153.3 Billion has been imported to meet the demand of domestic market.

Target customers for the proposed product primarily include oil refineries / mills for crude seed oil produced and individuals, wholesalers & retailers for other by-products. Initially, the project will be focusing on providing finished products to domestic markets. Proposed locations for establishment of the units are , Sibi, Naseer Abad & Jaffarabad - Punjab e.g. DG Khan, Rahim Yar Khan, Sadiqabad & Multan etc. – Sindh e.g. Khairpur, Gothki, Sukkar & N. Feroz etc. and KPK e.g. Abbotabad, Buner & D.I.Khan etc.

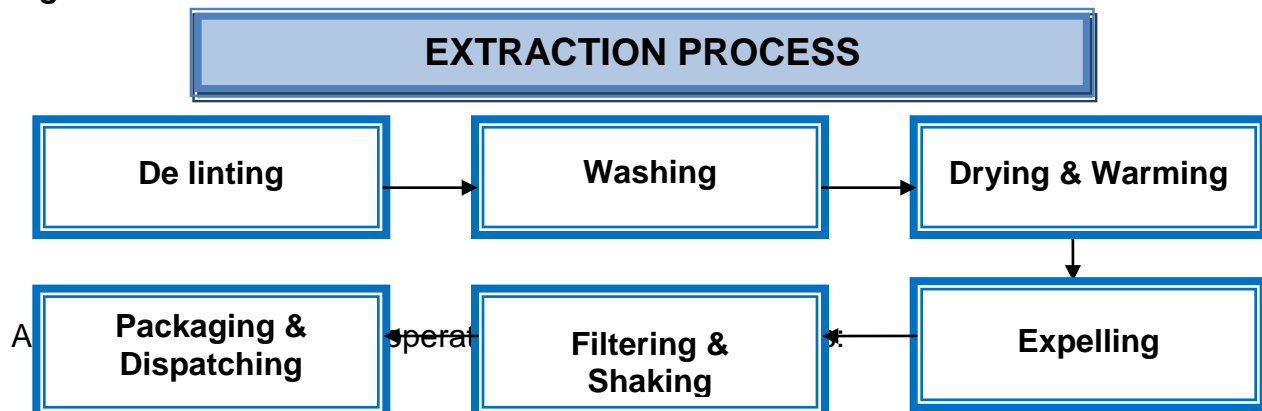
10. POTENTIAL TARGET MARKETS & CITIES

Whereas, the proposed project can be established at any time due to demand, however, keeping in view the harvesting season, it is proposed to be established during September to November. Bulk purchases of raw material can also be made during harvesting season to maximize the cost benefit. However, round the year processing will be done using stored raw material.

11. PRODUCTION PROCESS FLOW

The process of seed oil extraction is primarily based on simple crushing principle. A glimpse of the generic process is depicted as under:

Figure 1: Process flow



11.1 De-Linting

De-linting is done to remove the presence of any hair / linters from bulk seeds. Internationally, the process involves use of specialized cutters; however, acid de-linting is most commonly practiced in Pakistan due to cost savings and technological constraints. For the purpose of acid de-linting, 1 liter of sulphuric acid is used for every 10 kg of seeds. Conversely, de-linted seeds can also be purchased directly from the market for seed oil extraction. The de-linting process is highly recommended for seeds with high lint presence as cottonseed however the process may be used for other seeds with presence of lints on the outermost surface of seeds.

11.2 Washing

Washing of seeds is undertaken to remove dust particles, stones, chaff and other impurities. Impurities such as chaff left in the seed can absorb some of the oil and keep it from getting extracted through the expeller, whereas, dust and stone particles can damage the oil press screw or piston. Water tubs are used for the said purpose, where washing is done manually, however; mechanical lines are also available for the purpose in the market.

11.3 Drying and Warming

Seeds are dried and warmed in the third phase of processing. Moist seeds lead to low yields and can clog the screw, cage or other machinery parts of the press. In order to avoid the same, a thumb rule is that the moisture content of the seed should be close to 10%. An optimum heat range for seed oil extraction is from 100 to 160 degrees Celsius. Mechanical drying, as practiced internationally uses an oven or double boilers etc. for the process. However in Pakistan seeds are commonly dried in sheds under natural sunlight, and the same is proposed for the said unit.

11.4 Expelling

Oil is extracted mechanically using expeller, however, a ram press or even mortar and pestle can be used for the same purpose. Traditionally, small handmade presses / expellers are used however; power-driven presses are suggested for the plant.

11.5 Filtering and Shaking

The extracted seed oil is filtered and shaken to improve its quality and appearance. Caustic soda & bleach are normally used in Pakistan for the said purpose. The remaining residual cake for fertilizers & feeds etc. is separated and sold domestically. In addition, the left over waste materials are also produced from the process.

11.6 Packaging and Dispatching

The final product is packaged using hygienically cleaned barrels and sold to oil refineries / mills.

12. PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of seed oil extraction unit under the Prime Minister's Youth Business Loans. Various cost and revenue related assumptions along with results of the analysis are outlined in this section.

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

12.1 Project Economics

The proposed project will operate at 50% capacity in year 1, growing at the rate of 5% up to a maximum of 80% capacity utilization, resulting in the following internal rate of return and payback period and net present value.

Table 1: Project Economics

Description	Details
Internal Rate of Return (IRR)	37%
Payback Period (yrs)	3.72
Net Present Value (NPV)	Rs. 4,559,399

Returns on the investment and profitability are highly dependent on the demand, operational capacity, utilization of raw material and staff. In case the project is not very efficient, it will not be able to cover its expenses and recover payments.

12.2 Project Financing

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

Table 2: Project Financing

Description	Details
Total Equity (10%)	Rs.190,180
Bank Loan (90%)	Rs.1,711,621
Markup to the Borrower (%age/annum)	8%
Tenure of the Loan (Years)	8
Grace Period (Years)	1

12.3 Project Cost

Following requirements have been identified for operations of the proposed business.

Table 3: Capital Investment for the Project

Capital Investment	Amount (Rs.)
Building/Infrastructure	162,500
Furniture & fixtures	120,000
Machinery & Equipment	501,400
Office equipment	18,000
Pre Operating Cost	86,351
Total Capital Cost	888,251
Initial Working Capital	1,013,550
Total Project Cost	1,901,801

12.4 Space Requirement

It is recommended that the proposed project be established in a rented building to reduce project cost. In case a purpose built building is purchased, project cost will increase. Rent for the building is assumed to be Rs. 18,750 per month.

Table 4: Space Requirement

Description	Sq .ft Required
Office Building	250
Factory	1,000
Total Building Area	1,250

12.5 Equipment Requirement

Primary requirements for the said pre-feasibility include a seed oil extraction line. In addition to this, office equipment is recommended for routine operations. Details of equipment required for the project are given as below

Table 5: Equipment Detail

Equipment Details	Qty	Cost/Unit	Total Cost
Expeller (local)	1	350,000	350,000
Motor 5HP	1	100,000	100,000
Storage drums (200 kg)	13	2,000	26,000
Wiring/electrician		25,000	25,000
Cell Phone	1	5,000	5,000
Fax	1	13,000	13,000
Total			519,400

12.6 Furniture & Fixtures Requirement

Furniture & fixtures requirement for the project include office furniture and one (01) air conditioner, costing Rs. 120,000.

12.7 Human Resource Requirement

Human resource required for operating the unit is as follows:

Table 7: Human Resource Detail

Description	Qty	Total Monthly Salary
Owner Manager	1	20,000
Worker @ Rs. 10,000	4	40,000

12.8 Revenue Generation

It is assumed that oil production, residual cake and waste will be produced as per the following percentages of total quantity of seeds processed; 33%, 65% and 2% respectively. Further, expected sale prices of oil and residual cake are; Rs. 160 and Rs. 25 respectively, whereas waste cannot be resold.

Table 9: Revenue Detail

Product	Unit	Sales Price / Unit (Rs)	First Year Production	First Year Revenue (Rs)
Crude seed oil	Kg/Liter	160	31,680	5,068,800
Residual cake	Kg	25	62,400	1,560,000
Total Sales Revenue				6,628,800

12.9 Other Costs

A primary cost of the project is purchase of seeds for processing. For the purpose of rapeseed oil extraction, cost of seed is assumed at Rs. 35 per kg as per market rates. Similarly, overhead costs include utilities such as electricity, gas & water and machinery maintenance costs. It is also proposed that two months worth of raw material inventory be maintained during the life of the project

13. CONTACTS – SUPPLIERS/ EXPERTS

ADDRESS:

Al-Ramay Industries, Multan Road, Burewala (61010) Tel: +92-300 699 7798

For further details please write us at: info@alamayindustries.com

visit: www.alamayindustries.com

14. ANNEXURE

14.1 Income Statement

Statement Summaries										SMEDA
Income Statement										Rs. in actuals
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	6,628,800	8,020,848	9,625,018	11,469,813	13,587,317	16,013,623	18,789,318	20,668,249	22,735,074	25,008,582
Cost of goods sold	5,531,664	6,663,309	7,973,671	9,489,083	11,239,823	13,260,745	15,592,027	17,258,863	19,115,235	21,184,919
Gross Profit	1,097,136	1,357,539	1,651,347	1,980,730	2,347,493	2,752,878	3,197,291	3,409,387	3,619,840	3,823,662
<i>General administration & selling expenses</i>										
Administration expense	240,000	263,367	289,008	317,147	348,025	381,909	419,092	459,895	504,671	553,807
Rental expense	18,750	20,625	22,688	24,956	27,452	30,197	33,217	36,538	40,192	44,212
Utilities expense	120,000	132,000	145,200	159,720	175,692	193,261	212,587	233,846	257,231	282,954
Travelling & Comm. expense (phone, fax, etc.)	-	-	-	-	-	-	-	-	-	-
Office vehicles running expense	-	-	-	-	-	-	-	-	-	-
Office expenses (stationary, etc.)	-	-	-	-	-	-	-	-	-	-
Promotional expense	-	-	-	-	-	-	-	-	-	-
Insurance expense	-	-	-	-	-	-	-	-	-	-
Professional fees (legal, audit, etc.)	-	-	-	-	-	-	-	-	-	-
Depreciation expense	72,065	72,065	72,065	72,065	72,065	72,065	72,065	72,065	72,065	72,065
Amortization expense	17,270	17,270	17,270	17,270	17,270	-	-	-	-	-
Property tax expense	-	-	-	-	-	-	-	-	-	-
Miscellaneous expense	-	-	-	-	-	-	-	-	-	-
Subtotal	468,085	505,327	546,231	591,158	640,504	677,432	736,961	802,345	874,159	953,037
Operating Income	629,051	852,212	1,105,116	1,389,571	1,706,990	2,075,446	2,460,330	2,607,042	2,745,680	2,870,625
Other income	-	-	-	-	-	-	-	-	-	-
Gain / (loss) on sale of assets	-	-	-	-	-	-	-	-	-	-
Earnings Before Interest & Taxes	629,051	852,212	1,105,116	1,389,571	1,706,990	2,075,446	2,460,330	2,607,042	2,745,680	2,870,625
Interest expense	142,064	130,061	114,285	97,200	78,696	58,657	36,955	13,451	-	-
Earnings Before Tax	486,987	722,151	990,831	1,292,372	1,628,293	2,016,789	2,423,375	2,593,590	2,745,680	2,870,625
Tax	47,257	144,430	198,166	258,474	325,659	413,386	494,703	528,746	559,164	584,153
NET PROFIT/(LOSS) AFTER TAX	439,730	577,721	792,665	1,033,898	1,302,635	1,603,403	1,928,672	2,064,844	2,186,516	2,286,472
Balance brought forward		439,730	1,017,451	1,810,115	2,844,013	4,146,647	5,750,050	7,678,723	9,743,567	11,930,083
Total profit available for appropriation	439,730	1,017,451	1,810,115	2,844,013	4,146,647	5,750,050	7,678,723	9,743,567	11,930,083	14,216,555
Dividend	-	-	-	-	-	-	-	-	-	-
Balance carried forward	439,730	1,017,451	1,810,115	2,844,013	4,146,647	5,750,050	7,678,723	9,743,567	11,930,083	14,216,555

14.2 Balance Sheet

Statement Summaries											SMEDA
Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Rs. in actuals										
Assets											
<i>Current assets</i>											
Cash & Bank	250,000	530,661	688,358	955,499	1,333,437	1,818,659	2,387,360	3,316,197	4,192,437	5,297,094	14,325,485
Accounts receivable	-	-	-	-	-	-	-	-	-	-	-
Finished goods inventory	-	-	-	-	-	-	-	-	-	-	-
Equipment spare part inventory	-	-	-	-	-	-	-	-	-	-	-
Raw material inventory	744,800	991,329	1,308,554	1,715,296	2,235,163	2,897,729	3,740,002	4,525,403	5,475,737	6,625,642	-
Pre-paid annual land lease	18,750	20,625	22,688	24,956	27,452	30,197	33,217	36,538	40,192	44,212	-
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid insurance	-	-	-	-	-	-	-	-	-	-	-
Total Current Assets	1,013,550	1,542,615	2,019,599	2,695,752	3,596,052	4,746,586	6,160,579	7,878,138	9,708,367	11,966,948	14,325,485
<i>Fixed assets</i>											
Land	-	-	-	-	-	-	-	-	-	-	-
Building/Infrastructure	162,500	154,375	146,250	138,125	130,000	121,875	113,750	105,625	97,500	89,375	81,250
Machinery & equipment	501,400	451,260	401,120	350,980	300,840	250,700	200,560	150,420	100,280	50,140	-
Furniture & fixtures	120,000	108,000	96,000	84,000	72,000	60,000	48,000	36,000	24,000	12,000	-
Office vehicles	-	-	-	-	-	-	-	-	-	-	-
Office equipment	18,000	16,200	14,400	12,600	10,800	9,000	7,200	5,400	3,600	1,800	-
Total Fixed Assets	801,900	729,835	657,770	585,705	513,640	441,575	369,510	297,445	225,380	153,315	81,250
<i>Intangible assets</i>											
Pre-operation costs	86,351	69,081	51,810	34,540	17,270	-	-	-	-	-	-
Legal, licensing, & training costs	-	-	-	-	-	-	-	-	-	-	-
Total Intangible Assets	86,351	69,081	51,810	34,540	17,270	-	-	-	-	-	-
TOTAL ASSETS	1,901,801	2,341,530	2,729,180	3,315,997	4,126,962	5,188,161	6,530,089	8,175,583	9,933,747	12,120,263	14,406,735
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable	-	-	-	-	-	-	-	-	-	-	-
Export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Short term debt	-	-	-	-	-	-	-	-	-	-	-
<i>Other liabilities</i>											
Total Current Liabilities	-	-	-	-	-	-	-	-	-	-	-
<i>Other liabilities</i>											
Lease payable	-	-	-	-	-	-	-	-	-	-	-
Deferred tax	-	-	-	-	-	-	-	-	-	-	-
Long term debt	1,711,621	1,711,621	1,521,549	1,315,702	1,092,769	851,333	589,858	306,681	-	-	-
Total Long Term Liabilities	1,711,621	1,711,621	1,521,549	1,315,702	1,092,769	851,333	589,858	306,681	-	-	-
<i>Shareholders' equity</i>											
Paid-up capital	190,180	190,180	190,180	190,180	190,180	190,180	190,180	190,180	190,180	190,180	190,180
Retained earnings	-	439,730	1,017,451	1,810,115	2,844,013	4,146,647	5,750,050	7,678,723	9,743,567	11,930,083	14,216,555
Total Equity	190,180	629,910	1,207,631	2,000,295	3,034,193	4,336,828	5,940,231	7,868,903	9,933,747	12,120,263	14,406,735
TOTAL CAPITAL AND LIABILITY	1,901,801	2,341,530	2,729,180	3,315,997	4,126,962	5,188,161	6,530,089	8,175,583	9,933,747	12,120,263	14,406,735
<i>Note: Total assets value will differ from project cost due to first installment of leases paid at the start of year 0</i>											

14.3 Cash Flow Statement

Statement Summaries											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Rs. in actuals										
<i>Operating activities</i>											
Net profit	-	439,730	577,721	792,665	1,033,898	1,302,635	1,603,403	1,928,672	2,064,844	2,186,516	2,286,472
Add: depreciation expense	-	72,065	72,065	72,065	72,065	72,065	72,065	72,065	72,065	72,065	72,065
amortization expense	-	17,270	17,270	17,270	17,270	17,270	-	-	-	-	-
Deferred income tax	-	-	-	-	-	-	-	-	-	-	-
Accounts receivable	-	-	-	-	-	-	-	-	-	-	-
Finished good inventory	-	-	-	-	-	-	-	-	-	-	-
Equipment inventory	-	-	-	-	-	-	-	-	-	-	-
Raw material inventory	(744,800)	(246,529)	(317,225)	(406,742)	(519,867)	(662,566)	(842,273)	(785,400)	(950,335)	(1,149,905)	6,625,642
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Advance insurance premium	-	-	-	-	-	-	-	-	-	-	-
Accounts payable	-	-	-	-	-	-	-	-	-	-	-
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(744,800)	282,536	349,831	475,258	603,366	729,404	833,195	1,215,337	1,186,575	1,108,676	8,984,179
<i>Financing activities</i>											
Change in long term debt	1,711,621	-	(190,072)	(205,847)	(222,933)	(241,436)	(261,475)	(283,177)	(306,681)	-	-
Change in short term debt	-	-	-	-	-	-	-	-	-	-	-
Change in export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Add: land lease expense	-	18,750	20,625	22,688	24,956	27,452	30,197	33,217	36,538	40,192	44,212
Land lease payment	(18,750)	(20,625)	(22,688)	(24,956)	(27,452)	(30,197)	(33,217)	(36,538)	(40,192)	(44,212)	-
Change in lease financing	-	-	-	-	-	-	-	-	-	-	-
Issuance of shares	190,180	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares	-	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financ	1,883,051	(1,875)	(192,134)	(208,116)	(225,428)	(244,181)	(264,495)	(286,499)	(310,335)	(4,019)	44,212
<i>Investing activities</i>											
Capital expenditure	(888,251)	-	-	-	-	-	-	-	-	-	-
Acquisitions	-	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by invest	(888,251)	-	-	-	-	-	-	-	-	-	-
NET CASH	250,000	280,661	157,697	267,142	377,938	485,223	568,700	928,838	876,240	1,104,657	9,028,391
Cash balance brought forward		250,000	530,661	688,358	955,499	1,333,437	1,818,659	2,387,360	3,316,197	4,192,437	5,297,094
Cash available for appropriation	250,000	530,661	688,358	955,499	1,333,437	1,818,659	2,387,360	3,316,197	4,192,437	5,297,094	14,325,485
Dividend	-	-	-	-	-	-	-	-	-	-	-
Cash carried forward	250,000	530,661	688,358	955,499	1,333,437	1,818,659	2,387,360	3,316,197	4,192,437	5,297,094	14,325,485

14.4 Useful Project Management Tips

Technology

- **List of Machinery & Equipment** (As per Section 12.5)
- **Required Spare Parts & Consumables:** Suppliers credit agreements and availability as per schedule of maintenance to be ensured before start of operations.
- **Energy Requirement:** Should not be overestimated or installed in excess and alternate source of energy for critical operations may be arranged in advance.
- **Machinery Suppliers:** Training and after sales services should be sought.
- **Quality Assurance Equipment & Standards:** Quality standards need to be defined on the packaging and a system to check them instituted, this improves credibility.

Marketing

- **Product Development & Packaging:** Experts' help may be engaged for product/service and packaging design & development.
- **Ads & Point of Sales Promotion:** Business promotion and dissemination through marketing and launch events is highly recommended.
- **Sales & Distribution Network:** Experts' advice and distribution agreements with oil mills and refineries are highly recommended.
- **Price - Bulk Discounts, Cost plus Introductory Discounts:** Price should never be allowed to compromise quality. Price during introductory phase may be lower and used as a promotional tool. Product cost estimates should be carefully documented before price setting. Government controlled prices should be displayed, where applicable.

Human Resources

- **List of Human Resource** (As per Section 12.8)
- **Adequacy & Competencies:** Recruitment of skilled and experienced staff.
- **Performance Based Remuneration:** Attempt to manage human resource cost should be focused through performance measurement and performance based compensation.
- **Training & Skill Development:** It is encouraged to seek training and skills development of self & employees through experts and exposure to best practices is

a route to success. Least cost options for Training and Skill Development (T&SD) may be linked with compensation benefits and awards.

14.5 Useful Links

Small & Medium Enterprises Development Authority (SMEDA)

www.smeda.org.pk

Prime Minister's Office

www.pmo.gov.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 Jammu & Kashmir

www.ajk.gov.pk

Trade Development Authority of Pakistan (TDAP)

www.tdap.gov.pk

Federation of Pakistan Chambers of Commerce and Industry (FPCCI)

www.fpcci.com.pk

National Bank of Pakistan (NBP)

www.nbp.com.pk

First Women Bank Limited (FWBL)

www.fwbl.com.pk

15. Key Assumptions

Particular	Assumptions
Sales Price Growth Rate	10 % per year
Capacity Utilization Growth Rate	5 % per year
Increase in Cost of Raw Materials	10 % per year
Increase in utilities (Electricity/Water/Gas)	10 % per year
Debt / Equity Ratio	90 : 10
Depreciation	
Plant Building	10 % per year
Machinery	10 % per year
Office Furniture & Equipment	10 % per year
Loan Period	8 Years
Grace period	1 Year
Loan installments	Monthly
Financial Charges (Loan Rate)	8 % per annum