
**Pre-Feasibility Study
(Fruit Dehydration Unit)**



Small and Medium Enterprises Development Authority

**Ministry of Industries & Production
Government of Pakistan
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1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data/information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on as is where is basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision; including taking professional advice from a qualified consultant/technical expert before taking any decision to act upon the information.

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Document Control

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2 EXECUTIVE SUMMARY

Fruit Dehydration Unit is proposed to be located at area of AJK, Baluchistan, Gilgit Baltistan, KP, Punjab, and Sindh with adequate supply of required fruits at low costs.

Product(s) include **Fruit Dehydration Unit**

Capacity: Installed capacity **48.96 Tons** and initial utilization [**34.27 Tons, 70%**]

Total Cost Estimates is [**Rs. 18,764,619**] with fixed investment [**Rs. 9,382,309**] and working capital [**Rs. 9,382,309**]

Given the cost assumptions IRR and payback are [**40%**] and [**3.03 years**] respectively

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

- Abundance of required low cost fruits to ensure optimum working days and capacity utilization.
- Effective Marketing campaign.
- Suitable location with availability of electric power and access roads.
- Daily supply and processing of Fruits due to being highly perishable.

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 **Fruit Dehydration 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.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

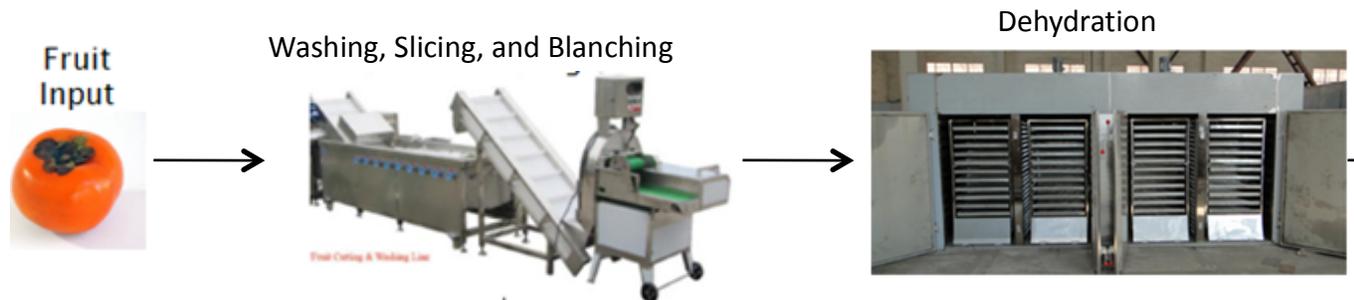
Following key parameters must be addressed as per pre-feasibility study under preparation

- **Technology:** The unit will use the imported (Chinese) or Local Fruit Dehydration Machinery.
- **Location:** The unit may be commenced at a place closest to the Fruit Farms.
- **Product:** The unit will initially produce and market the dehydrated fruits including Apple, Banana, Peach, Pears, Persimmon, and Resins.
- **Target Market:** The super markets and retail chains of the Pakistan, and Exporters to the Sril Lanka, Europe and Middle East.
- **Employment Generation:** The proposed project will provide direct employment to 14 people.

Financial analysis shows the farm shall be profitable from the very first year of operation.

5.1 Production Process Flow

The picture of dehydrator is shown just for expression of process flow, otherwise the investor may decided to install the belt technology for bulk production requirements.



5.1.1 Storage

The received fruits should immediately be sent to the raw material store with normal ambient temperature.

5.1.2 Putting on the Conveyor Belt Leading

The Raw Material Store should be adjacent to the processing line from where the fruits will be directly loaded on the conveyor belts leading to the Fruits Washer.

5.1.3 Fruits Washing

The fruit will be washed in the washing unit preferably the Bubble Washer.

5.1.4 Selection of Fruit

On the way between washing and the slicing, the intact fruits will be put into the slicer, whereas the fruit with some damaged portion will be cut for waste utilization through manual cutting recovery of intact portions going again into the slicer.

5.1.5 Slicing of Fruits

The auto slicer will be used to slice the fruit into suitable pieces.

5.1.6 Dehydration of Fruits

Right after the slicing, the pieces will be kept in trays and placed in the Dehydrators in a batch of 6 Hours (Chinese Machinery) or 24-48 Hours (Local Machinery). The required temperature is 50-60 C°.

Dehydration	Units
Input of Fruits	
Kg Per Tray	10
No. of Trays per Unit	12
Kg Per Unit	120
No. of Units	2
Kg Per Batch of 5 Hours	240
Batches Per Shift of 10 Hours	2
Kg Per Shift	480
No of Shifts	2
Input Kg Per Day	960
Inputs Kg Per 300 Days	288,000
Input Tons Per Year	288

Dehydration	Units
Output of Fruits	
Fruits Input to Output Percentage (Average)	17%
Fruits Output Per Day (Kg)	163
Fruits Output Per 300 Days (Kg)	48,960
Output Tons Per Year	48.96

5.1.7 Packaging of Fruits

Finally the dehydrated fruits will be packed and then stored in the finished goods store.

5.2 Installed and Operational Capacities

The installed capacity of the unit will be 48.96 Tons, whereas it will start with the first year's operational capacity of 34.27 Tons.

6 CRITICAL FACTORS

The project should observe the following important factors:

- Abundance of required low cost fruits/vegetable to ensure optimum working days and capacity utilization.
- Effective Marketing campaign.
- Suitable location with availability of electric power and access roads.
- Daily supply and processing of Fruits/Vegetable due to being highly perishable.

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

All of the abundant fruit bearing areas of Pakistan sufficing the desired quantity of the maximum capacity. Especially, the apple, banana, grapes, peach, pear, and persimmon.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

The target market of this scale unit will be the Domestic Retail Chains targeting the quality oriented customers, and the exporters. However, after two years of profitable operations, the project may decide to expand directly in to the export markets of Sri Lanka, Middle East. In order to cater to the European markets the project will have to invest further in machinery, marketing, and certifications.

9 PROJECT COST SUMMARY

9.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of **Rs. 16.42 million** in the year one. The capacity utilization during year one is worked out at 70% with 100% increase in subsequent year 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.)	3.03
Net Present Value (Rs.)	26,404,744

9.2 Project Financing

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

Table 2: Project Financing

Description	Details
Total Equity (50%)	Rs. 9,382,309
Bank Loan (50%)	Rs. 9,382,309
Markup to the Borrower (%age / annum)	13%
Tenure of the Loan (Years)	05

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	
Land	3,000,444
Building/Infrastructure	7,938,113
Machinery and Equipment's	5,883,830
Furniture and Fixtures	265,500
Office Equipments	308,000
Pre-operating Cost	292,148
Total Capital Cost	17,688,034
Working Capital	
Spare Parts Inventory	4,675
Raw Material Inventory	77,718
Up-front Land Lease Rent	-
Up-front Insurance payment	294,192
Cash	700,000
Total Working Capital	1,076,584
Total Project Cost	18,764,619

9.4 Land Required

The required land for the project is 1.5 Kanal which will be purchased at total cost of **Rs. 3,000,444/**

9.5 Space Requirement

The space requirement for the proposed **Fruit Dehydration Unit** is estimated considering various facilities include as given below;

Table 4: Space Requirement

Description	Estimated Area (Sq. ft)	Unit Cost (Rs.)	Total Cost (Rs.)
Office Block (Concrete)	400	3,000	1,200,000
Processing Hall (Prefabricated)	2,800	1,500	4,200,000
Raw Material Store (Prefeb.)	600	1,500	900,000
Finished Goods Store (Prefeb.)	200	1,500	300,000
Kitchen (Prefeb.)	150	1,400	210,000
Toilets	144	1,300	187,200
Change Room	100	1,300	130,000
Guard Room	80	1,500	120,000
Pavements	500	200	100,000
Grounds	1,776	50.2	90,931
Boundary Wall	500	1,000	500,000
Total	6,750	N/A	7,938,113

9.6 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.)
Elevating Conveyor	1	354,640	354,640
Bubble Fruit Washer	1	786,500	786,500
Fruit Slicer	1	550,550	550,550
Fruit Conveyor/SS Steel Tables	1	360,000	360,000
Fruit Dryer	1	998,140	998,140
Vaccum Packing	1	370,000	370,000
Generator (30 KVA)	1	1,000,000	1,000,000
Transformer (30 KVA) with material and supervision	1	1,000,000	1,000,000
Installation Charges	Lump Sum		500,000
Total			5,883,830

9.7 Furniture & Fixtures Requirement

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

Table 6: Furniture & Fixture

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Tables	02	20,000	40,000
Officers' Chairs	04	6,000	24,000
Visitors' Chairs	09	3,500	31,500
File Racks	02	15,000	30,000
Split Air Conditioners	02	60,000	120,000
Fans	05	4,000	20,000
Total	24		265,500

9.8 Office Equipment Requirement

Such type of small scale farm does not require any office equipment.

Table 7: Office Equipments

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Computer with LCD	02	75,000	150,000
Printer	01	18,000	18,000
Scanner	01	15,000	15,000
Networking Equipments/Accessories	01	-	-
Mini Telephone Exchange	01	15,000	15,000
Fax Machine	01	20,000	20,000
Photocopy Machine	01	50,000	50,000
Water Dispenser	02	15,000	30,000
Total	17		308,000

9.9 Human Resource Requirement

For this scale of **Fruit Dehydration Unit** the following staff will be hired:

Table 8: Human Resource Requirement

Description	Number	Unit Cost (Rs.)	Total Cost (Rs.)
CEO	01	50,000	600,000
Accounts Officer	01	35,000	420,000
Store Keeper	01	20,000	240,000
Skilled Labor	03	20,000	720,000
Unskilled Labor	04	15,000	720,000
Office Boy	01	14,000	168,000
Sweeper	01	14,000	168,000
Security Guards	02	15,000	360,000
Total	14		3,396,000

9.10 Raw Material Costs to COGS

Table 9: Raw Materials

Description	Rs./Year
R/M Fruits & Vegetable	5,796,014
Packing Material	32,844
Total	5,828,858

9.11 Utilities and other costs

The following expenses are to be incurred by the unit:

Table 10: Miscellaneous

Description	Rs./Year
Direct Electricity (Plant Machinery)	441,095
Maintenance	56,098
Indirect Electricity (Management Building)	63,179
Gas	8,020
Office Expenses (Stationery etc)	23,668
Travelling Expense	120,000
Promotional Expense	328,440
Communication Expense	31,687
Total	1,072,187

9.12 Revenue Generation

Based on the initial capacity utilization of 70%, for **Fruit Dehydration Unit**, 34.27 Tons of dehydrated fruits will be produced. Out of this quantity, 32.84 will be sold and the remaining 1.43 Tons will be retained in the finished goods inventory. The sales revenue during the first year of operations is estimated as under;

Table 11: Revenue Generation – Year 1

Description	Units Produced (Tons)	Finished Goods Inventory (No.)	Units available for Sale (No.)	Sale Price / unit (Rs.)	Sales Revenue (Rs.)
Dehydrated Fruit	34.27	1.43	32.84	500,000	16,422,000
Total					16,422,000

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	E-mail
Rasheed Engineering	Faisalabad	+92 300-8656451	-
ARTEX GROUP COMPANY LIMITED	---Zhengzhou Really Imp.& Exp. Co. Ltd., China	0086-18703820613	coco@zzreally.com
Global Corporation	86-L, PECHS, Block-2, Karachi, Pakistan	+92-21-34311108-9	ka@globalcorporation.com
Koldware Industries (Pvt.)Ltd.	Office No. 427, 4th Floor, Bhayani Shopping Centre, Block'M', North Nazimabad, Karachi	+92-21-36677024	info@koldwareindustries.com

10.2 Raw Material Suppliers

The local fruits and vegetable growers will be the main suppliers, whereas the packing material can be purchased from the Karachi or Lahore Markets.

10.3 Technical Experts / Consultants

Name of Expert/Organization	Address	Phone	E-mail
Syed Nauman Ali	R11, 16A, Buffer Zone, North Nazimabad, Karachi	0331-2714171	Snoman.shah@gmail.com
Anwer Eqbal	Superior Consultants, Deans Plaza, Peshawar	0345-9346117	Khattak_anwar@yahoo.com
Abdul Salam		0345-8324699	asbaloch2009@gmail.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
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
Small Industries Development Board, KP	
Khyber Pakhtunkhwa Economic Zones Development Comapny	

12 ANNEXURES

12.1 Income Statement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Rs. in actuals
Revenue	16,422,000	25,301,100	28,139,760	30,953,736	34,049,110	37,454,021	41,199,423	45,319,365	49,851,301	54,836,432	
Cost of goods sold	7,706,050	11,309,313	12,573,993	13,826,817	15,204,478	16,719,416	18,385,311	20,217,207	22,231,647	24,446,822	
Gross Profit	8,715,950	13,991,787	15,565,767	17,126,919	18,844,632	20,734,605	22,814,112	25,102,158	27,619,654	30,389,609	
<i>General administration & selling expenses</i>											
Administration expense	1,979,668	2,172,411	2,383,920	2,616,022	2,870,721	3,150,219	3,456,928	3,793,500	4,162,840	4,568,140	
Rental expense	-	-	-	-	-	-	-	-	-	-	
Utilities expense	71,198	78,130	85,737	94,085	103,245	113,297	124,328	136,433	149,716	164,292	
Travelling & Comm. expense (phone, fax, etc.)	110,905	121,703	133,552	146,555	160,824	176,482	193,665	212,520	233,211	255,917	
Office vehicles running expense	-	-	-	-	-	-	-	-	-	-	
Office expenses (stationary, etc.)	23,668	8,800	9,657	10,597	11,629	12,761	14,004	15,367	16,864	18,505	
Promotional expense	328,440	506,022	562,795	619,075	680,982	749,080	823,988	906,387	997,026	1,096,729	
Insurance expense	294,192	264,772	235,353	205,934	176,515	147,096	117,677	88,257	58,838	29,419	
Professional fees (legal, audit, etc.)	82,110	126,506	140,699	154,769	170,246	187,270	205,997	226,597	249,257	274,182	
Depreciation expense	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	
Amortization expense	58,430	58,430	58,430	58,430	58,430	-	-	-	-	-	
Property tax expense	-	-	-	-	-	-	-	-	-	-	
Miscellaneous expense	492,660	759,033	844,193	928,612	1,021,473	1,123,621	1,235,983	1,359,581	1,495,539	1,645,093	
Subtotal	4,483,908	5,138,446	5,496,975	5,876,717	6,296,703	6,702,465	7,215,208	7,781,281	8,405,929	9,094,917	
Operating Income	4,232,042	8,853,342	10,068,792	11,250,202	12,547,929	14,032,140	15,598,903	17,320,877	19,213,725	21,294,693	
Other income	124,740	200,471	260,979	298,154	680,784	763,913	1,953,301	2,153,411	3,686,272	3,942,950	
Gain / (loss) on sale of assets	-	-	-	-	-	-	-	-	-	-	
Earnings Before Interest & Taxes	4,356,781	9,053,812	10,329,771	11,548,356	13,228,713	14,796,053	17,552,205	19,474,288	22,899,996	25,237,642	
Interest expense	1,188,376	972,303	771,820	545,274	289,277	-	-	-	-	-	
Earnings Before Tax	3,168,406	8,081,509	9,557,951	11,003,082	12,939,436	14,796,053	17,552,205	19,474,288	22,899,996	25,237,642	
Tax	995,917	2,576,790	3,063,032	3,518,819	4,015,585	4,882,170	5,445,345	6,429,188	7,101,962	8,333,850	
NET PROFIT/(LOSS) AFTER TAX	2,172,489	5,504,719	6,494,919	7,484,264	8,923,851	9,913,883	12,106,860	13,045,100	15,798,034	16,903,792	

12.2 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	700,000	671,483	2,757,112	2,742,962	3,084,652	2,716,359	21,776,449	6,579,519	48,827,192	10,770,949	84,200,828
Accounts receivable	-	1,349,753	1,714,648	2,196,200	2,428,500	2,671,350	2,938,485	3,232,333	3,555,567	3,911,123	4,302,236
Finished goods inventory	-	335,046	476,446	523,916	576,117	633,520	696,642	766,055	842,384	926,319	1,018,618
Equipment spare part inventory	4,675	7,562	8,832	10,200	11,781	13,608	15,717	18,153	20,967	24,216	-
Raw material inventory	77,718	131,713	161,139	194,979	235,924	285,468	345,417	417,954	505,725	611,927	-
Pre-paid annual land lease	-	-	-	-	-	-	-	-	-	-	-
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Pre-paid insurance	294,192	264,772	235,353	205,934	176,515	147,096	117,677	88,257	58,838	29,419	-
Total Current Assets	1,076,584	2,760,330	5,353,529	5,874,191	6,513,490	6,467,400	25,890,386	11,102,271	53,810,672	16,273,953	89,521,681
<i>Fixed assets</i>											
Land	3,000,444	3,000,444	3,000,444	3,000,444	3,000,444	3,000,444	3,000,444	3,000,444	3,000,444	3,000,444	3,000,444
Building/Infrastructure	7,938,113	7,541,207	7,144,301	6,747,396	6,350,490	5,953,584	5,556,679	5,159,773	4,762,868	4,365,962	3,969,056
Machinery & equipment	5,883,830	5,295,447	4,707,064	4,118,681	3,530,298	2,941,915	2,353,532	1,765,149	1,176,766	588,383	-
Furniture & fixtures	308,000	277,200	246,400	215,600	184,800	154,000	123,200	92,400	61,600	30,800	-
Office vehicles	-	-	-	-	-	-	-	-	-	-	-
Office equipment	265,500	238,950	212,400	185,850	159,300	132,750	106,200	79,650	53,100	26,550	-
Total Fixed Assets	17,395,887	16,353,248	15,310,609	14,267,971	13,225,332	12,182,694	11,140,055	10,097,416	9,054,778	8,012,139	6,969,500
<i>Intangible assets</i>											
Pre-operation costs	292,148	233,718	175,289	116,859	58,430	-	-	-	-	-	-
Legal, licensing, & training costs	-	-	-	-	-	-	-	-	-	-	-
Total Intangible Assets	292,148	233,718	175,289	116,859	58,430	-	-	-	-	-	-
TOTAL ASSETS	18,764,619	19,347,296	20,839,427	20,259,021	19,797,252	18,650,094	37,030,441	21,199,688	62,865,450	24,286,092	96,491,182
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable	-	495,142	759,191	845,695	932,073	1,027,467	1,132,856	1,249,336	1,378,130	1,520,610	1,615,157
Export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Short term debt	-	-	-	-	-	-	-	-	-	-	-
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	495,142	759,191	845,695	932,073	1,027,467	1,132,856	1,249,336	1,378,130	1,520,610	1,615,157
<i>Other liabilities</i>											
Lease payable	-	-	-	-	-	-	-	-	-	-	-
Deferred tax	-	941,413	941,413	941,413	941,413	941,413	753,130	564,848	376,565	188,283	0
Long term debt	9,382,309	7,479,257	5,937,077	4,194,415	2,225,206	-	-	-	-	-	-
Total Long Term Liabilities	9,382,309	8,420,669	6,878,490	5,135,827	3,166,619	941,413	753,130	564,848	376,565	188,283	0
<i>Shareholders' equity</i>											
Paid-up capital	9,382,309	9,382,309	9,382,309	9,382,309	9,382,309	9,382,309	9,382,309	9,382,309	9,382,309	9,382,309	9,382,309
Retained earnings	-	2,172,489	3,276,947	5,157,178	6,189,726	15,240,102	8,606,394	37,869,005	11,524,147	67,526,480	15,049,341
Total Equity	9,382,309	11,554,798	12,659,257	14,539,487	15,572,036	24,622,411	17,988,703	47,251,315	20,906,457	76,908,789	24,431,650
TOTAL CAPITAL AND LIABILITI	18,764,619	20,470,610	20,296,938	20,521,009	19,670,728	26,591,290	19,874,689	49,065,498	22,661,152	78,617,681	26,046,807

12.3 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	-	2,172,489	5,504,719	6,494,919	7,484,264	8,923,851	9,913,883	12,106,860	13,045,100	15,798,034	16,903,792
Add: depreciation expense	-	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639	1,042,639
amortization expense	-	58,430	58,430	58,430	58,430	58,430	-	-	-	-	-
Deferred income tax	-	941,413	-	-	-	-	(188,283)	(188,283)	(188,283)	(188,283)	(188,283)
Accounts receivable	-	(1,349,753)	(364,895)	(481,552)	(232,300)	(242,850)	(267,135)	(293,848)	(323,233)	(355,557)	(391,112)
Finished good inventory	-	(335,046)	(141,400)	(47,471)	(52,201)	(57,403)	(63,122)	(69,412)	(76,329)	(83,935)	(92,299)
Equipment inventory	(4,675)	(2,888)	(1,269)	(1,369)	(1,581)	(1,826)	(2,109)	(2,436)	(2,814)	(3,250)	24,216
Raw material inventory	(77,718)	(53,995)	(29,427)	(33,839)	(40,946)	(49,544)	(59,948)	(72,538)	(87,770)	(106,202)	611,927
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Pre-paid lease interest	-	-	-	-	-	-	-	-	-	-	-
Advance insurance premium	(294,192)	29,419	29,419	29,419	29,419	29,419	29,419	29,419	29,419	29,419	29,419
Accounts payable	-	495,142	264,049	86,504	86,378	95,394	105,389	116,480	128,794	142,480	94,547
Other liabilities	-	-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(376,584)	2,997,850	6,362,265	7,147,679	8,374,102	9,798,109	10,510,732	12,668,881	13,567,523	16,275,346	18,034,846
<i>Financing activities</i>											
Change in long term debt	9,382,309	(1,903,053)	(1,542,179)	(1,742,663)	(1,969,209)	(2,225,206)	-	-	-	-	-
Change in short term debt	-	-	-	-	-	-	-	-	-	-	-
Change in export re-finance facility	-	-	-	-	-	-	-	-	-	-	-
Add: land lease expense	-	-	-	-	-	-	-	-	-	-	-
Land lease payment	-	-	-	-	-	-	-	-	-	-	-
Change in lease financing	-	-	-	-	-	-	-	-	-	-	-
Issuance of shares	9,382,309	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares	-	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing :	18,764,619	(1,903,053)	(1,542,179)	(1,742,663)	(1,969,209)	(2,225,206)	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(17,688,034)	-	-	-	-	-	-	-	-	-	-
Acquisitions	-	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by investing ε	(17,688,034)	-	-	-	-	-	-	-	-	-	-
NET CASH	700,000	1,094,797	4,820,086	5,405,016	6,404,893	7,572,903	10,510,732	12,668,881	13,567,523	16,275,346	18,034,846

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Details
Hours Operational Per Day	10
Days Operational Per Month	25
Days Operational Per Year	300
Operating Cost Growth Rate	10%

13.2 Production Cost Assumptions

Description	Details
COGS Annual Growth Rate	10%

13.3 Revenue Assumptions

Description	Details
Sales Price Growth Rate	10%
Maximum Capacity Utilization	95%
Initial Capacity Utilization	70%

13.4 Economy Related Assumptions

Description	Details
Inflation Rate	10%
Electricity Price Growth Rate	10%
Wage Growth Rate	10%