



Pre-feasibility Study

DETERGENT POWDER MANUFACTURING UNIT

June 2021

“The figures and financial projections are approximate due to fluctuations in exchange rates, energy costs, and fuel prices etc. Users are advised to focus on understanding essential elements such as production processes and capacities, space, machinery, human resources, and raw material etc. requirements. Project investment, operating costs, and revenues can change daily. For accurate financial calculations, utilize financial calculators on SMEDA’s website and consult financial experts to stay current with market conditions.”

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

TABLE OF CONTENTS

1	DISCLAIMER	2
2	EXECUTIVE SUMMARY	3
3	INTRODUCTION TO SMEDA	3
4	PURPOSE OF THE DOCUMENT.....	4
5	BRIEF DESCRIPTION OF PROJECT AND PRODUCT	4
5.1	Production Process Flow.....	5
5.2	Proposed Product Mix.....	5
5.3	Installed and Operational Capacity.....	6
6	CRITICAL SUCCESS FACTORS.....	6
7	GEOGRAPHICAL POTENTIAL FOR INVESTMENT	7
8	POTENTIAL TARGET CUSTOMERS / MARKETETS.....	7
9	PROJECT COST SUMMARY	7
9.1	Project Economics	7
9.2	Project Cost	9
9.3	Space Requirement	10
9.4	Machinery and Equipment Requirement.....	10
9.5	Furniture and Fixtures Requirement.....	11
9.6	Office Equipment Requirement	11
9.7	Vehicles Requirement	12
9.8	Raw Material Requirement.....	12
9.9	Human Resource Requirement.....	13
9.10	Utilities and Other Cost	14
9.11	Revenue Generation	14
10	CONTACT DETAILS.....	14
11	USEFUL WEB LINKS	15
12	ANNEXURES.....	17
12.1	Income Statement.....	17
12.2	Balance Sheet.....	18
12.3	Cash Flow Statement.....	19
12.4	Machinery Details.....	20
13	KEY ASSUMPTIONS	21
13.1	Operating Cost Assumptions.....	21
13.2	Production Cost Assumptions	21
13.3	Revenue Assumptions	22

1 DISCLAIMER

The objective of 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 have been taken to compile this document, the contained information may vary due to any of the concerned factors. The future is uncertain, 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 to be obtained by the user. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information necessary for making an informed decision, including taking professional advice from a qualified consultant/technical expert before making any decision to act upon the information.

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2 EXECUTIVE SUMMARY

Laundry Detergent or Washing Powder is a type of cleaning agent, used for cleaning laundry. The detergent powder removes the dust, dirt, grease, oil, and other environmental pollutants with ease and effectiveness. The demand for Detergent powder is found in the market all through the year, and it is increasing day by day. It is categorized as Fast Moving Consumer Good (FMCG).

This particular pre-feasibility study is for setting up a Detergent Powder Manufacturing Unit. The focus of the business would be to provide quality Detergent Powder in five different quantity packets (i.e. 5 kg, 2 kg, 1 kg, 0.5 kg, and 0.1 kg). The produced detergent will be sold to wholesalers and retailers in major cities of Pakistan.

The proposed unit has an installed capacity to produce 2.40 million kg of Detergent Powder per annum, based on two shifts of 8 hours and 300 operational days. However, starting operational capacity is assumed at 60% (i.e., 1.44 million kg) with a gradual increase of 5% in subsequent years up to maximum capacity utilization of 95% in year 8. This production capacity is estimated to be economically viable and justifies the capital and operational cost of the project. However, the entrepreneur's knowledge of the industry, competitive pricing, and strong linkage with suppliers and wholesalers' networks are vital factors for the success of this business.

The total cost of the proposed 'Detergent Powder Manufacturing Unit' is estimated at Rs. 28.83 million out of which Rs. 17.69 million is the capital cost and Rs. 11.14 million is for working capital. The project is to be financed through 100% equity. The project NPV is around Rs. 43.48 million, with an IRR of 37% and a Payback Period of 3.77 years. The project will provide employment opportunities to 32 individuals, including the owner. The legal business status of this project is proposed as 'Sole Proprietorship'.

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 the development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through the 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 investment areas have 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 the 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 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 the **Detergent Powder Manufacturing Unit** business by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal specific 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 the basis of an informed Investment Decision.

5 BRIEF DESCRIPTION OF PROJECT AND PRODUCT

The detergent powder market is one of the key segment of the FMCG and has high growth potential. Many varieties of detergent are available in the market, depending upon a different percentage of active ingredients and other components. The detergent powder manufacturing process is not complex. It involves simply mixing different elements in the right formula.

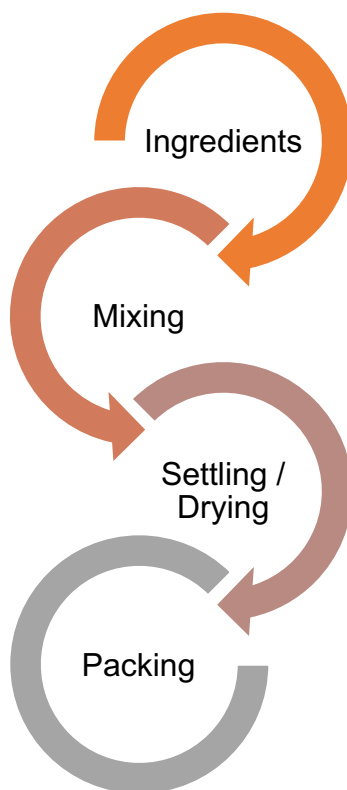
The proposed project will make detergent by mixing Sulphonic Acid, Caustic, Silicate, Soda, Sulphate, Minors (Color, Aroma), Salt, and Calcium in a certain percentage. For this purpose, a fully automatic mixing machine that has the capacity to produce 500 kg of detergent powder per hour will be used. According to proposed business model, the unit will procure required chemicals from the local market and

supply detergent powder packed in five different sizes (i.e. 5 kg, 2 kg, 1 kg, 0.5 kg, and 0.1 kg) to wholesalers and retailers. The unit will also have an in-house packing facility. About 2.5% of the total production is considered wastage and typical in the detergent and soap manufacturing process. The legal business status of this project is assumed to be 'Sole Proprietorship'.

5.1 Production Process Flow

There are three different methods of manufacturing of dry laundry detergents, i.e. Spray Drying, Agglomeration or Dry Mixing. The combination of these methods can also be used for manufacturing depending upon the production facility. The proposed unit will use Blending / Mixing Process because it is very simple, cost effective and easy to manage. This process starts with mixing of all the ingredients (i.e. different chemicals) in the mixing machines as per the standard formulated recipe (explained in raw material section). After adding the color and fragrance the dry detergent powder is packed in different sized packets.

Figure 1: Production Process Flow



5.2 Proposed Product Mix

The product mix would include Detergent Powder packed in five different sizes. Detailed production mix is given in the table below:

Table 1: Product Mix

Pack Size (kg)	Production Percentage
5.0	20%
2.0	20%
1.0	25%
0.5 (500 gm)	25%
0.1 (100 gm)	10%
Total	100%

5.3 Installed and Operational Capacity

The installed and operational capacity of the Detergent Powder Manufacturing Unit mainly depends upon the installed machinery.

The proposed business will have the capacity to produce 2.4 million kg (4.53 million packets) of detergent powder per year and 500 kg per hour. The maximum capacity utilization is assumed at 95%. However, during the 1st year of operation unit will operate at 60% capacity and produce 1.44 million kg (2.72 million packets) of detergent powder. The details of operational and installed capacity are provided in the table below:

Table 2: Installed and Operational Capacity-(No. of Packets)

Pack Size (kg)	Total Installed Capacity	Operational Capacity 60% (Year 1)	Maximum Operational Capacity 95% (Year 8)
5.0	96,000	57,600	91,200
2.0	240,000	144,000	228,000
1.0	600,000	360,000	570,000
0.5 (500 gm)	1,200,000	720,000	1,140,000
0.1 (100 gm)	2,400,000	1,440,000	2,280,000
Total	4,536,000	2,721,600	4,309,200

6 CRITICAL SUCCESS FACTORS

Following are critical success factors associated with this business:

- Prior knowledge and information about the Chemical Industry, especially detergent and soap manufacturing.
- Selection of appropriate plant and machinery.
- Strong linkages with raw material suppliers for sourcing quality material on time at economical prices.
- Efficient management of stock to keep inventory cost at the minimum.
- Induction of trained human resources for the handling of business operations, especially in production and sales.
- Stringent supervision of the production process at every level.
- Effective marketing and distribution of the product, particularly to the retailers.

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

Due to the existence of the potential target customers in metropolitan cities, it is recommended to establish the proposed venture in any major city. therefore, cities like Lahore, Islamabad, Karachi, Rawalpindi, Peshawar, Quetta, etc., are the most suitable locations for erecting the proposed Detergent Powder Manufacturing Unit.

It is important to find a location with adequate availability of electricity, skilled labour, raw material and other infrastructure.

8 POTENTIAL TARGET CUSTOMERS / MARKTETS

The potential target customers of the produced Detergent Powder will be mainly households and commercial laundry cleaners etc. The product will be sold through wholesalers and retailers to the potential customer segments.

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of the Detergent Powder Manufacturing Unit. Various cost and revenue-related assumptions, along with the analysis results, are outlined in this section.

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

9.1 Project Economics

All the figures in this financial model have been calculated for estimated sales of Rs. 133.4 million in year one. To financially appraise the project, a 100% Equity-Based

Business Model has been assumed. The following table shows the Internal Rate of Return, Payback Period, and Net Present Value of the proposed venture:

Table 2: Project Economics (Equity Financed)

Description	Details
Internal Rate of Return (IRR)	37%
Payback Period (Yrs.)	3.77
Net Present Value (Rs.)	43,482,809

Calculation of break-even analysis is as follows:

Table 3: Breakeven (100% Equity-Based)

Break-Even Analysis	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Break-Even Revenue	106,131,376	105,958,313	106,118,534	102,884,874	104,933,207	114,029,828	117,014,805	120,631,764	119,752,058	125,983,073
Break-Even Units	2,165,011	2,039,133	1,926,619	1,762,180	1,695,532	1,738,223	1,682,759	1,636,579	1,532,683	1,521,163
Margin of Safety	20%	31%	39%	48%	53%	55%	59%	62%	64%	65%

However, for further explanation, the Project Economics based on Debt:Equity (i.e., 50:50) Model has also been computed. Based on the Debt:Equity model, the Internal Rate of Return, Payback Period, and Net Present Value of the proposed project are provided in the table below:

Table 4: Project Economics Based on Debt (50%):Equity (50%)

Description	Details
Internal Rate of Return (IRR)	35%
Payback Period (Yrs.)	4.09
Net Present Value (Rs.)	52,184,408

The financial assumptions for Debt: Equity is as follows:

Table 5.1: Financial Assumptions for Debt: Equity Model

Description	Details
Debt	50%
Equity	50%

Interest Rate on Debt	12%
Debt Tenure (Years)	5
Debt Payment / Year	1

The projected Income Statement, Balance Sheet, and Cash Flow Statement enclosed as annexures are based on a 100% Equity-Based Business Model.

9.2 Project Cost

Following fixed and working capital requirements have been identified for operations of the proposed business.

Table 5: Project Cost

Description	Amount Rs.
Capital Cost	
Machinery and Equipment	11,154,176
Office Vehicles	2,655,237
Pre-Operating Costs	1,286,000
Furniture and Fixtures	1,071,000
Office Equipment	928,630
Security Deposit for Rental Building	450,000
Legal, Licensing and Training Costs	150,000
Total Capital Cost	17,695,043
Working Capital	
Raw Material Inventory	8,453,650
Cash	1,739,992
Upfront Insurance Payment	467,387
Upfront Building Rental	450,000
Equipment Spare Part Inventory	29,375
Total Working Capital	11,140,404
Total Project Cost	28,835,447

9.3 Space Requirement

An estimated area of 5,855 sq. ft. (around 1.30 kanal) will be required for the proposed venture. In order to reduce the initial capital expenditure, the proposed detergent powder manufacturing unit will be established on rental premises. Therefore, the building may be acquired in the industrial state or the outskirts of big cities. The rent of the building will depend on the area and geographical location of the unit.

The project's infrastructure requirement mainly comprise a production hall, warehouses for storage of raw materials and finished goods along with an admin block for offices of production and administration staff. However, majority of units operating in the industry do not follow any set pattern. The following table shows the estimated space requirement for different operations:

Table 6: Space Requirement

Description	Area (Sq. Ft.)
Stores for Raw Material, Finished Goods and Spares Warehouse	2,500
Packing Area	1,300
Production Facility	800
Management Building	500
Lab and Quality Test	450
Pavement / Driveway	225
Electric Room	80
Total	5,855

For this particular pre-feasibility, the rent amount has been determined at Rs. 150,000 per month, to be paid on a quarterly basis in advance.

9.4 Machinery and Equipment Requirement

Machinery and equipment for the proposed project are stated below:

Table 7: Machinery and Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Packing Machine*	1		5,524,853

Detergent Mixer	1		784,125
Custom Dusty, Sale Tax, Clearance Charges	-		2,785,728
Installation Cost (Fabrication cost)	1	909,471	909,471
Generator (Hyundai HDG30 30Kva / 24Kw Three Phase Diesel Generator)	1	800,000	800,000
Experts Cost	1	200,000	200,000
Lab Equipment	1	150,000	150,000
Total			11,154,177

**Details are given in Annex 12.4.*

9.5 Furniture and Fixtures Requirement

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

Table 8: Furniture and Fixture

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Electric Wiring and Lighting		750,000	750,000
Chairs	19	6,726	127,800
Table	6	18,200	109,200
CCTV	1	30,000	30,000
Guest Chairs	5	5,800	29,000
Sofa Set	1	25,000	25,000
Total			1,071,000

9.6 Office Equipment Requirement

Following office equipment will be required for Detergent powder Manufacturing Unit:

Table 9: Office Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Air Conditioners	3	83,000	249,000
Laptops	3	65,000	195,000
Industrial Exhaust Fans	3	38,610	115,830
Computers	3	30,000	90,000
Fridge	1	51,500	51,500
Fans	11	4,500	49,500
Water Cooler	1	45,000	45,000
Energy Savers	45	800	36,000
LED	1	32,500	32,500
Computer printer	2	13,200	26,400
Water Dispenser	1	16,000	16,000
Telephones	7	1,200	8,400
Microwave Oven	1	7,500	7,500
Exhaust Fans	2	3,000	6,000
Total			928,630

9.7 Vehicles Requirement

Details of the vehicles required for the project are given below:

Table 10: Vehicles

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Mini Truck	1	2,500,000	2,500,000
Honda CD-70	1	77,900	77,900
Registration fee		3%	77,337
Total			2,655,237

9.8 Raw Material Requirement

Following are the details of raw material required for the proposed venture:

Table 112: Raw Material – 5 kg Detergent Powder

Description	Percentage	Cost (Rs)
Sulphonic Acid	12%	45
Caustic	3%	5
Silicate	7%	35
Soda	16%	80
Sulphate	12%	75
Minors (Color, Aroma)	0.8%	20
Salt	48%	6
Calcium	0.8%	15
Total	100%	281

9.9 Human Resource Requirement

In order to run the operations of Detergent Powder Manufacturing Unit smoothly, details of human resources required along with a number of employees and monthly salary are recommended as under:

Table 13: Human Resource

Description	No. of Employees	Monthly Salary per Person (Rs.)
CEO	1	100,000
Marketing and Sales Manager	1	75,000
Production Supervisor	2	40,000
Account Officer	1	35,000
Sales Officer	2	35,000
HSE Officer	1	35,000
Machine Operator	4	30,000
Admin / IT	1	30,000
Lab Assistant	1	30,000
Store In-charge	1	25,000
Security Guard	2	20,000

Electrician	2	20,000
Driver	1	20,000
Labour	10	18,000
Office Boys	2	18,000
	32	

It is assumed that the owner would have prior experience or knowledge about the Detergent powder manufacturing business. Salaries of all employees are estimated to increase by 10% annually.

9.10 Utilities and Other Cost

An essential cost to be borne by the business is the cost of electricity; the annual electricity expenses is estimated as Rs. 1.53 million. This project also requires marketing and promotional activities for which Rs. 2.67 million will be spent in year 1. The cost of maintenance of machinery is assumed as Rs. 1.41 million during first year.

9.11 Revenue Generation

Based on the operational capacity utilization of 60%, sales revenue during the first year of operations is provided in the table below:

Table 14: Revenue Generation (Year 1)

Packet Size (kg)	Rate Per Unit (Rs.)	Quantity Sold (No. of Packs)	Total Revenue (Rs.)
5.0	410	57,600	23,616,000
2.0	175	144,000	25,200,000
1.0	95	360,000	34,200,000
0.5	50	720,000	36,000,000
0.1	10	1,440,000	14,400,000
Total		2,721,600	133,416,000

10 CONTACT DETAILS

In order to facilitate potential investors, contact details of private-sector vendors relevant to the proposed project is given below:

Table 12: Suppliers

Name of Supplier	Type of supplies	Address / Phone
Zhejiang Zhonghao Machinery Technology Co.Ltd	Machinery	conweb@zh2100.com + 86 0577 86818000
Shophingam	Hyundai HDG30 30Kva / 24Kw Three Phase Diesel Generator	www.shoppingum.com/price/50kva-generator/
	HP Printer	www.whatprice.com.pk/index.php/computers/printers/hp-printers
Woodpecker	Office Furniture	www.apnafurniture.pk/product/ace-office-table-or-workstation/ 0331-8999222, 0331-7151566

11 USEFUL WEB LINKS

Small and Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
Government of Pakistan	www.pakistan.gov.pk
Ministry of Industries and Production	www.moip.gov.pk
Ministry of Education, Training, and Standards in Higher Education	http://moptt.gov.pk
Government of Punjab	www.punjab.gov.pk
Government of Sindh	www.sindh.gov.pk
Government of Khyber Pakhtunkhwa	www.khyberpakhtunkhwa.gov.pk
Government of Balochistan	www.balochistan.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Government of Azad Jamu & Kashmir	www.ajk.gov.pk
Trade Development Authority of Pakistan (TDAP)	www.tdap.gov.pk

Security and Exchange 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 Vocational Training Council (PVTC)	www.pvtc.gop.pk
Technical Education and Vocational Training Authority (TEVTA)	www.tevta.org
Pakistan Chemicals Manufacturers Association	www.pcma.org.pk
Pakistan Soap Manufacturers Association	www.pdma.com.pk
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	www.fiedmc.com.pk
Punjab Industrial Estate Development and Management Company (PIEDMC)	www.pie.com.pk
Punjab Small Industries Corporation	www.psic.gop.pk
Sundar Industrial Estate	www.sie.com.pk
Quaid-e-Azam Industrial Estate	www.qie.com.pk
Sindh Small Industries Corporation	www.ssic.gos.pk

12 ANNEXURES

12.1 Income Statement

Calculations	SMEDA									
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	133,416,000	153,206,040	174,890,587	198,625,738	224,579,501	252,932,664	283,879,719	317,629,863	336,687,655	356,888,914
<i>Cost of sales</i>										
COGS-RM & Packing	101,443,800	115,392,323	130,482,088	146,792,349	164,407,431	183,417,040	203,916,591	226,007,555	237,307,933	249,173,330
Operation costs 1 (direct labor)	4,935,000	5,535,115	6,089,325	6,698,923	7,369,456	8,107,023	8,918,333	9,810,765	10,803,688	11,884,056
Operating costs 2 (machinery maintenance)	1,410,000	1,635,375	1,849,444	2,080,831	2,330,733	2,600,424	2,891,256	3,204,671	3,368,598	3,537,028
Operating costs 3 (direct electricity)	1,100,027	1,310,865	1,552,871	1,830,170	2,147,399	2,509,773	2,923,147	3,394,098	3,733,508	4,106,859
Total cost of sales	108,888,827	123,873,678	139,973,728	157,402,272	176,255,019	196,634,259	218,649,328	242,417,090	255,213,727	268,701,273
Gross Profit	24,527,173	29,332,362	34,916,860	41,223,466	48,324,483	56,298,404	65,230,391	75,212,773	81,473,928	88,187,641
<i>General administration & selling expenses</i>										
Administration expense	5,952,000	6,547,200	7,201,920	7,922,112	8,714,323	9,585,756	10,544,331	11,598,764	12,758,641	14,034,505
Administration benefits expense	595,200	654,720	720,192	792,211	871,432	958,576	1,054,433	1,159,876	1,275,864	1,403,450
Building rental expense	1,800,000	1,980,000	2,178,000	2,395,800	2,635,380	2,898,918	3,188,810	3,507,691	3,858,460	4,244,306
Electricity expense	428,106	470,917	518,008	569,809	626,790	689,469	758,416	834,257	917,683	1,009,452
Water expense	66,000	69,300	72,765	76,403	80,223	84,235	88,446	92,869	97,512	102,388
Gas expense	60,000	63,000	66,150	69,458	72,930	76,577	80,406	84,426	88,647	93,080
Travelling expense	1,190,400	1,309,440	1,440,384	1,584,422	1,742,865	1,917,151	2,108,866	2,319,753	2,551,728	2,806,901
Communications expense (phone, fax, mail, internet, etc.)	297,600	327,360	360,096	396,106	435,716	479,288	527,217	579,938	637,932	701,725
Office vehicles running expense	79,657	87,623	96,385	106,024	116,626	128,289	141,117	155,229	170,752	187,827
Office expenses (stationary, entertainment, janitorial services, etc.)	297,600	327,360	360,096	396,106	435,716	479,288	527,217	579,938	637,932	701,725
Promotional expense	2,668,320	2,534,904	2,408,159	2,287,751	2,173,363	2,064,695	1,961,460	1,863,387	1,770,218	1,681,707
Insurance expense	467,387	389,671	311,954	234,238	200,775	381,127	276,393	171,659	66,925	33,463
Professional fees (legal, audit, consultants, etc.)	333,540	383,015	437,226	496,564	561,449	632,332	709,699	794,075	841,719	892,222
Depreciation expense	2,334,843	2,334,843	2,334,843	1,466,125	1,466,125	2,925,660	2,944,600	2,944,600	1,519,171	1,541,097
Amortization of pre-operating costs	257,200	257,200	257,200	257,200	257,200	-	-	-	-	-
Amortization of legal, licensing, and training costs	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Property tax expense	-	-	-	-	-	-	-	-	-	-
Bad debt expense	2,668,320	2,534,904	2,408,159	2,287,751	2,173,363	2,064,695	1,961,460	1,863,387	1,770,218	1,681,707
Subtotal	19,511,173	20,286,456	21,186,537	21,353,079	22,579,278	25,381,053	26,887,872	28,564,850	28,978,403	31,130,555
Operating Income	5,016,000	9,045,906	13,730,322	19,870,387	25,745,205	30,917,351	38,342,519	46,647,923	52,495,525	57,057,086
Other income (interest on cash)	54,216	135,248	281,043	443,987	574,314	732,701	983,791	1,290,753	1,611,747	2,348,511
Gain / (loss) on sale of office equipment (IT)	-	-	-	-	246,892	-	-	-	-	-
Gain / (loss) on sale of office equipment	-	-	186,840	-	-	309,711	-	-	405,239	-
Gain / (loss) on sale of office vehicles	-	-	-	-	1,062,095	-	-	-	-	-
Earnings Before Interest & Taxes	5,070,216	9,181,154	14,198,205	20,314,374	27,628,506	31,959,763	39,326,311	47,938,676	54,512,510	59,405,597
Earnings Before Tax	5,070,216	9,181,154	14,198,205	20,314,374	27,628,506	31,959,763	39,326,311	47,938,676	54,512,510	59,405,597
Tax	941,065	2,333,404	4,089,371	6,230,031	8,789,977	10,305,917	12,884,208	15,898,536	18,199,378	19,911,959
NET PROFIT/(LOSS) AFTER TAX	4,129,151	6,847,750	10,108,834	14,084,343	18,838,529	21,653,846	26,442,102	32,040,140	36,313,132	39,493,638

12.2 Balance Sheet

Calculations											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
Assets											
Current assets											
Cash & Bank	1,739,992	2,597,282	8,222,552	14,260,872	21,258,094	24,687,017	33,929,041	44,774,275	58,485,981	70,453,745	117,427,121
Accounts receivable		7,310,466	7,852,659	8,988,949	10,233,324	11,594,664	13,082,525	14,707,189	16,479,715	17,926,507	19,002,098
Finished goods inventory		2,316,784	2,584,844	2,920,465	3,283,775	3,676,767	4,101,574	4,560,473	5,055,900	5,316,953	5,597,943
Equipment spare part inventory	29,375	35,774	42,479	50,184	59,021	69,143	80,720	93,944	103,687	114,314	-
Raw material inventory	8,453,650	10,096,828	11,988,042	14,160,874	16,653,188	19,507,649	22,772,311	26,501,277	29,217,658	32,212,468	-
Pre-paid building rent	450,000	495,000	544,500	598,950	658,845	724,730	797,202	876,923	964,615	1,061,076	-
Pre-paid insurance	467,387	389,671	311,954	234,238	200,775	381,127	276,393	171,659	66,925	33,463	-
Total Current Assets	11,140,405	23,241,804	31,547,030	41,214,532	52,347,022	60,641,097	75,039,766	91,685,739	110,374,480	127,118,526	142,027,162
Fixed assets											
Security Deposit for Rental Building	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000
Machinery & equipment	11,154,176	10,038,759	8,923,341	7,807,923	6,692,506	5,577,088	4,461,671	3,346,253	2,230,835	1,115,418	-
Furniture & fixtures	1,071,000	963,900	856,800	749,700	642,600	535,500	428,400	321,300	214,200	107,100	-
Office vehicles	2,655,237	1,770,158	885,079	-	-	4,276,286	2,850,857	1,425,429	-	-	-
Office equipment (IT)	311,400	207,600	103,800	360,484	240,323	120,161	417,306	278,204	139,102	483,084	322,056
Office equipment	617,230	493,784	370,338	246,892	123,446	787,759	630,207	472,656	315,104	157,552	-
Total Fixed Assets	16,259,043	13,924,201	11,589,358	9,615,000	8,148,875	11,746,795	9,238,441	6,293,841	3,349,241	2,313,153	772,056
Intangible assets											
Pre-operation costs	1,286,000	1,028,800	771,600	514,400	257,200	-	-	-	-	-	-
Legal, licensing, & training costs	150,000	135,000	120,000	105,000	90,000	75,000	60,000	45,000	30,000	15,000	-
Total Intangible Assets	1,436,000	1,163,800	891,600	619,400	347,200	75,000	60,000	45,000	30,000	15,000	-
TOTAL ASSETS	28,835,448	38,329,805	44,027,988	51,448,932	60,843,097	72,462,891	84,338,207	98,024,580	113,753,721	129,446,679	142,799,218
Liabilities & Shareholders' Equity											
Current liabilities											
Accounts payable		6,191,036	7,071,683	8,029,731	9,073,172	10,209,039	11,444,959	12,789,209	14,166,223	14,959,086	13,847,143
Total Current Liabilities	-	6,191,036	7,071,683	8,029,731	9,073,172	10,209,039	11,444,959	12,789,209	14,166,223	14,959,086	13,847,143
Shareholders' equity											
Paid-up capital	28,835,448	28,835,448	28,835,448	28,835,448	28,835,448	28,835,448	28,835,448	28,835,448	28,835,448	28,835,448	28,835,448
Retained earnings		3,303,321	8,120,857	14,583,753	22,934,477	33,418,405	44,057,801	56,399,922	70,752,050	85,652,145	100,116,627
Total Equity	28,835,448	32,138,769	36,956,305	43,419,201	51,769,925	62,253,853	72,893,249	85,235,370	99,587,498	114,487,593	128,952,075
TOTAL CAPITAL AND LIABILITIES	28,835,448	38,329,805	44,027,988	51,448,932	60,843,097	72,462,891	84,338,207	98,024,580	113,753,721	129,446,679	142,799,218

12.3 Cash Flow Statement

Calculations											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		4,129,151	6,847,750	10,108,834	14,084,343	18,838,529	21,653,846	26,442,102	32,040,140	36,313,132	39,493,638
Add: depreciation expense		2,334,843	2,334,843	2,334,843	1,466,125	1,466,125	2,925,660	2,944,600	2,944,600	1,519,171	1,541,097
amortization of pre-operating costs		257,200	257,200	257,200	257,200	257,200	-	-	-	-	-
amortization of training costs		15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Accounts receivable		(7,310,466)	(542,193)	(1,136,290)	(1,244,375)	(1,361,340)	(1,487,861)	(1,624,663)	(1,772,526)	(1,446,793)	(1,075,590)
Finished goods inventory		(2,316,784)	(268,060)	(335,621)	(363,310)	(392,992)	(424,806)	(458,899)	(495,427)	(261,053)	(280,991)
Equipment inventory	(29,375)	(6,399)	(6,706)	(7,704)	(8,837)	(10,122)	(11,577)	(13,224)	(9,743)	(10,628)	114,314
Raw material inventory	(8,453,650)	(1,643,178)	(1,891,214)	(2,172,833)	(2,492,314)	(2,854,461)	(3,264,662)	(3,728,966)	(2,716,381)	(2,994,810)	32,212,468
Pre-paid building rent	(450,000)	(45,000)	(49,500)	(54,450)	(59,895)	(65,885)	(72,473)	(79,720)	(87,692)	(96,461)	1,061,076
Advance insurance premium	(467,387)	77,716	77,716	77,716	33,463	(180,352)	104,734	104,734	104,734	33,463	33,463
Accounts payable		6,191,036	880,647	958,048	1,043,441	1,135,867	1,235,920	1,344,251	1,377,014	792,863	(1,111,943)
Cash provided by operations	(9,400,412)	1,683,120	7,655,485	10,044,742	12,730,841	16,847,570	20,673,780	24,945,214	31,399,718	33,863,884	72,002,533
<i>Financing activities</i>											
Issuance of shares	28,835,448	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	28,835,448	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(17,695,043)	-	-	(360,484)	-	(5,064,045)	(417,306)	-	-	(483,084)	-
Cash (used for) / provided by investing activities	(17,695,043)	-	-	(360,484)	-	(5,064,045)	(417,306)	-	-	(483,084)	-
NET CASH	1,739,992	1,683,120	7,655,485	9,684,258	12,730,841	11,783,525	20,256,474	24,945,214	31,399,718	33,380,800	72,002,533

12.4 Machinery Details

Sr. No.	Machine	Parts	Quantity	Price
1	Vertical Packer	Vertical Packer-Forming, Sealing, Cutting	1	2,939,700
		Ribbon Date Printer-Printing Date-	1	70,725
2	Two Head Weigher	2 Head Weigher-Filling, Weighing	1	849,315
3	Z Type Elevator	Bucket Conveyor-Feeding-	1	870,225
4	Output Conveyor	Output Conveyor-Conveying -	1	167,280
5	Supporting Platform	Supporting Platform Support Weigher	1	488,464
Sub Total			7	5,385,709
Freight (Karachi, Pakistan)				139,144
Total				5,524,853

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Details
Operating Costs Growth Rate	5%
Administration Benefits Expense	10% Admin Expense
Traveling Expense	20% Admin Expense
Communication Expense	5% Admin Expense
Office Vehicles Running Expense	3% of Vehicles Cost
Office Expenses (Stationary, Entertainment, Janitorial Services, Etc.)	5% Admin Expense
Promotional Expense	2% of Revenue
Professional Fees (Legal, Audit, Consultants, Etc.)	0.3% of Revenue
Bad Debt Expense	2% of Revenue
Machinery and Equipment Insurance Rate	3%
Office Vehicles Insurance Rate	5%
Security Deposit for Rental Building	Rs.450,000
Licenses Obtained	Rs. 50,000
Depreciation Method	Straight Line
Inflation Rate	10%
Electricity Price Growth Rate	10%
Water Price Growth Rate	5%
Gas Price Growth Rate	5%
Wage Growth Rate	10%

13.2 Production Cost Assumptions

Description	Details				
Detergent Powder Packing	5 kg	2 kg	1 kg	0.5 kg	0.1 kg

Raw Material (Rs.)	281	112	56	28	6
Packing (Rs.)	12	10	8	6	4
Cost of Goods Sold Growth Rate	5%				
Industrial Electricity Connection Rate	Rs. 20 /KWH				
Machinery Maintenance	Rs 1 (Per kg of Production)				
Production Wastage	2.5%				
Cost of Goods Sale Price Growth Rate	5%				

13.3 Revenue Assumptions

Description	Details				
Detergent Packing	5 kg	2 kg	1 kg	0.5 kg	0.1 kg
Sale Price in Year 1 (Rs.)	410	175	95	55	10
Sale Price Growth Rate	6%				
Production Capacity Utilization Year 1	60%				
Production Capacity Utilization Growth Rate	5%				
Maximum Capacity Utilization	95%				
Hours Operational / Day	16				
Shift Length (Hours)	8				
No. of Shifts	2				
Days Operational / Year	300				

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