
Pre-Feasibility Study

TEFLON TAPE MANUFACTURING UNIT



Small and Medium Enterprises Development Authority

Ministry of Industries & Production

Government of Pakistan

www.smeda.org.pk

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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 have 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 making any decision to act upon the information.

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2 EXECUTIVE SUMMARY

Teflon tape is a very useful thread sealant, mainly used in plumbing, ductwork and piping applications. It is basically made from Polytetrafluoroethylene (PTFE) and is also known as Thread Seal Tape, PTEF Tape or Plumber's Tape. The tape is sold cut to specific widths and wound on a spool, making it easy to wind around pipe threads. The key characteristics of Teflon tape include the fact that it is both hydrophobic and extremely low friction. The demand of Teflon tape is steadily increasing due to growth in construction industry as well as regular plumbing and piping application works requirements both in households and industries.

This particular pre-feasibility study is for setting up a 'Teflon Tape Manufacturing Unit' in any major industrial city in Pakistan. The proposed unit will be equipped with latest extrusion and moulding machines to produce the high quality teflon tape that will be sold to wholesalers and retailers. Target end-users will be builders, plumbers, piping applicators and household consumers.

The proposed unit can produce 124.42 million meters of teflon tape in spools of 10 and 15 meters per annum based on 300 working days on 8 hours single shift bases. However, starting operational capacity is assumed at 55% with an annual increase of 5%, it will attain a maximum capacity utilization of 90% in 8th year of operation. This production capacity is estimated to be economically viable and justifies the capital as well as operational cost of the project. Entrepreneur's knowledge of the chemicals and plastic industry, competitive pricing, and strong linkage with wholesalers and retailers of hardware, building and plumbing supplies are key factors for the success of this business.

Total project cost is estimated as Rs. 54.384 million with capital investment of Rs. 50.493 million and working capital Rs. 3.891 million. Based on an equity finance model, the project NPV is around Rs. 31.920 million, with an IRR of 27% and Payback Period of 4.88 years. The project will provide employment opportunities to 17 people including the Owner. The legal business status of this project is assumed to be 'Sole Proprietorship'.

3 INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 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 pre-feasibility studies in key areas of investment have been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the pre-feasibility 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 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 “**Teflon Tape Manufacturing Unit**” by providing them with a general understanding of the business to support 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 the basis of any Investment Decision.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

Thread seal tape (also known as Teflon Tape) is a Polytetrafluoroethylene (PTFE) film tape commonly used in plumbing and piping applications for sealing pipe threads. The tape is wound on a spool, making it easy to wind around pipe threads. PTFE is a synthetic Fluoropolymer widely used across a range of industries and applications. Teflon tape works as a deformable filler and thread lubricant, helping to seal the joint without hardening or making it more difficult to tighten and instead making it easier to tighten. It helps in minimizing leakage and strengthening the joints.

Usually, the tape is wrapped around a pipe's thread three times before it is screwed. It is extensively used in various piping and plumbing application for industrial and household

clients, including plumbing, pressurized water systems, heating / cooling systems and air compression equipment etc.

The proposed unit will be equipped with latest and automated technology for teflon tape manufacturing. Production line will mainly comprise of Single Screw Extrusion Line, Tape Slitting Machine, Injection Moulding and Plastic Shredder/Crusher for complete in-house production. Tape will be produced through extrusion process while plastic spools, on which the tapes will be wrapped, are formed by injection moulding process.

The major raw material is Polytetrafluoroethylene (PTFE) and Polypropylene, which will be procured from the local market. Financial analysis shows the unit shall be profitable from the very first year of operation. According to the proposed business model unit will mainly target to suppliers of building material, plumbing works, heating / cooling system installation, air compressing equipment assemblers and hardware retailers through wholesalers as well as on order manufacturing basis. The ideal location for the proposed project is any major industrial city across Pakistan. The legal business status of this project is assumed to be 'Sole Proprietorship.

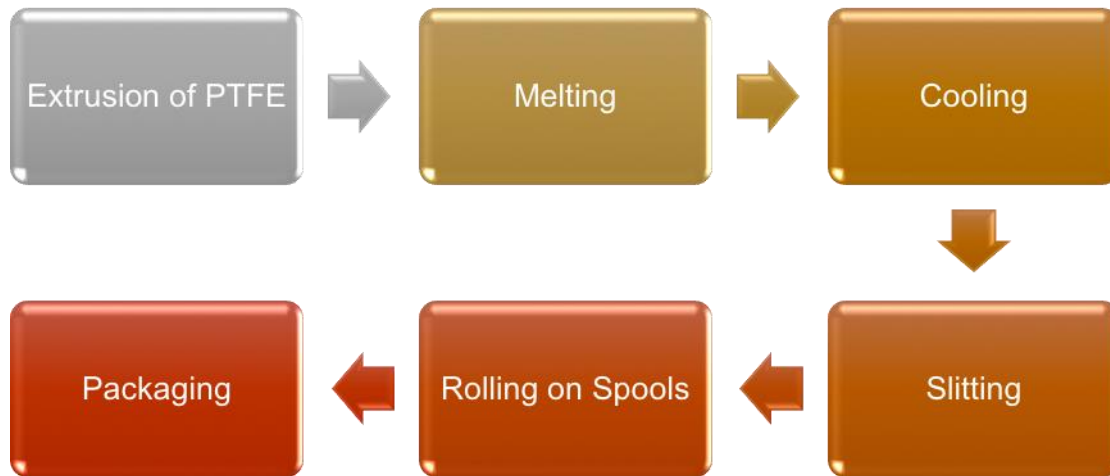
5.1 Operational Process Flow

The following three key processes are involved in the manufacturing of Teflon Tape.

- Extrusion Process
- Slitting Process
- Injection Moulding Process (for Plastic Part or Tape Roll, also called Spool)

In extrusion process, PTFE is added to the hopper with extruding machine. The material is transferred from hopper to barrel where it is melted by applying specific temperature. When material is completely melted and converts to molten plastic form, it is passed through the die and cooling tank. After cooling, the soften plastic material is compressed with rollers to get required thickness of material. This material is winded on cylinders and slitting process is carried out to cut the large role into narrower tape rolls. In the last step tapes are wrapped on spools in 10 meter and 15 meter sizes.

The plastic spools are produced through injection moulding process. In this process plastic granules are added to injection moulding machines to produce the required sizes of plastic roll.

Figure 1: Teflon Tape Manufacturing Process Flow

5.2 Installed and Operational Capacities

The proposed unit will produce teflon tapes in two different sizes i.e. 10 meters and 15 meters in length. The total installed capacity of the project is assumed at 124,416,000 meters in a year with 300 working days on 8 hours single shift bases per day.

However, initial operational capacity of the project will be 55%% with an annual growth of 5% in subsequent years. Maximum capacity utilization of the project is assumed at 90% which will be achieved in the 8th year of operation.

Table 1: Installed and Operational Capacity

Description	Total Installed Capacity	Operational Capacity 55 % (Year 1)	Maximum Capacity Utilization 90% (Year 10)
Teflon Tape in Meters	124,416,000	68,428,800	111,974,400

6 CRITICAL FACTORS

- ⇒ Background knowledge and related experience of the entrepreneur in the field of plastic or polymer related manufacturing.
- ⇒ Selection of quality PTFE granules on the basis of best analysis of cost and revenues; cost efficiency through better management.
- ⇒ Exceed customer expectations by offering high quality products at reasonable prices with quick turnaround times.

- ⇒ Selection of appropriate location with availability of required infrastructural support and easy access to markets.
- ⇒ Effective marketing and distribution of the product.
- ⇒ Induction of trained human resources for the handling of business operations especially in production and distribution.
- ⇒ Stringent supervision of the production process at every level.
- ⇒ Continuous flow of orders through aggressive marketing and establishing good working relations for repeat orders.

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

Location selection is critical to the success of the project. It is important to find a location preferably in an industrial cluster where utilities especially electricity and other infrastructure are conveniently available. Presently, Karachi, Lahore, Gujranwala, Faisalabad, Multan, Rawalpindi and Peshawar can be considered as these cities have adequate availability of skilled labor, raw material, and infrastructure. Additionally, majority of associated industries with teflon tape manufacturing are also located in these cities.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

Potential target customers for the produced Teflon Tape will mainly comprise of multiple service providers and suppliers, mainly including building material, plumbing works installers, piping installations, heating / cooling system installers, air compressor equipment assemblers, hardware retailers and household consumer who required plumbing or piping applications.

Since, majority of the target customer belongs to the business segments, therefore, above identified metropolitan cities will be the potential markets for the produced rubber tiles. The general household consumers will be targeted through retailers, while business buyers will be targeted through order manufacturing basis as well as through wholesalers.

9 PROJECT COST SUMMARY

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

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

9.1 Project Economics

All the figures in this financial model have been calculated for the estimated sales of Rs. 93.234 million in the year one. The capacity utilization during year one is worked out at 55%.

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)	27%
Payback Period (Yrs.)	4.88
Net Present Value (Rs.)	31,920,365

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	58,762,791	58,825,843	59,779,883	61,535,511	63,899,487	66,417,423	109,481,205	115,921,004	125,016,949	135,127,530
Break-Even Units	39,175,194	35,652,026	32,936,575	30,821,693	29,096,140	27,493,330	41,199,524	39,657,203	38,880,886	38,204,842
Margin of Safety	37%	47%	55%	61%	66%	70%	57%	61%	62%	62%

However, for further explanation the Project Economics based on Debt:Equity (i.e. 50:50) Model has also been computed. Based on 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)	25%
Payback Period (yrs.)	5.18
Net Present Value (Rs.)	40,537,963

The financial assumptions for Debt:Equity is as follows:

Table 5: Financial Assumptions for Debt: Equity Model

Description	Details
Debt (50%)	27,312,384
Equity (50%)	27,312,384
Interest Rate on Debt	12%
Debt Tenure	5 Years
Debt Payment / Year	1

The projected Income Statement, Cash Flow Statement and Balance Sheet enclosed as annexures are based on 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 6: Project Cost

Description	Amount Rs.
Capital Cost	
Land	2,800,000
Building / Infrastructure	9,281,400
Machinery & Equipment	34,771,875
Pre-operating costs	1,200,000
Office vehicles	1,076,240
Wapda Security	603,000
Furniture & Fixtures	538,000
Computer and Office Equipment	222,000
Total Capital Cost	50,492,515
Raw Material Inventory	2,668,818
Cash	1,174,976
Equipment Spare Parts	47,520
Total Working Capital	3,891,313
Total Project Cost	54,383,828

9.3 Land and Building Requirement

Approximately 1 Kanal of land would be required for the establishment of the proposed unit, it is recommended that required land should be procured in the industrial estates of any major industrial city. The cost of land is estimated at the rate of Rs. 2.8 million. The infrastructural requirements of the project mainly comprise the construction of a production hall, warehouses for storage of raw materials and finished goods, management office and open space. The cost of construction of building for the proposed unit is provided in the table below.

Table 7: Infrastructure Requirement

Description	Estimated Area (Sq. ft.)	Unit Cost (Rs.)	Total Cost (Rs.)
Management Office	288	2,500	720,000
Warehouse	448	2,200	985,600
Production Hall	2,304	2,200	5,068,800
Crushing Unit	324	2,200	712,800
Packing Hall	360	2,200	792,000
Washroom	72	2,500	180,000
Security Room	120	2,200	264,000
Electric Room	80	2,200	176,000
Electric Room Installation			35,000
Open Area	504	50	25,200
Boundary Wall and Gate	280	1,150	322,000
Total Construction Cost			9,281,400
Cost of Land			2,800,000
Total Cost			12,081,400

9.4 Machinery & Equipment Requirement

Plant, machinery and equipment for the proposed project are stated below.

Table 8: Machinery & Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
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Extrusion Line	1	11,536,875	11,536,875
Slitting Machine	1	1,500,000	1,500,000
Injection Machine 100 Ton (New)	4	4,000,000	16,000,000
Mould (4 - Cavity)	1	500,000	500,000
Crusher/Shredder 200 Kg	1	480,000	480,000
Chiller 2.2 Tons	1	620,000	620,000
Hopper Dryer 100 Kg	1	250,000	250,000
Autoloader 300 GN	2	150,000	300,000
Generator	1	2,450,000	2,450,000
Transformer	1	1,135,000	1,135,000
Total			34,771,875

9.5 Furniture & Fixtures Requirement

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

Table 9: Furniture & Fixture

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Table and Chairs (CEO office)	1	35,000	35,000
Visitor Chairs (CEO office)	2	8,000	16,000
Sofas (CEO office)	2	12,000	24,000
Table & Chairs for Staff	3	35,000	105,000
Visitor Chairs	6	8,000	48,000
Miscellaneous Furniture	1	100,000	100,000
Industrial Fans	3	35,000	105,000
Exhaust Fans	4	7,000	28,000
LED Bulbs (18 Watts)	17	1,000	17,000
Air Conditioner (1 ton Split)	1	60,000	60,000
Total			538,000

9.6 Office Equipment Requirement

Following office and computer equipment will be required for the project.

Table 10: Office Equipment Requirement

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Water Dispenser	2	19,000	38,000
Telephones	1	1,500	1,500
Computers	3	50,000	150,000
Computer printer (s)	1	23,000	23,000
Scanner	1	9,500	9,500
Total			222,000

9.7 Office Vehicles Requirement

Following office vehicles will be required for the project.

Table 11: Office Vehicle Requirement

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Pickup	1	1,076,240	1,076,240
Total			1,076,240

9.8 Raw Material Requirements

Polytetrafluoroethylene (PTFE) and Polypropylene are the main raw materials for the proposed business, which will be procured directly from local market. The following table provides the details for the raw material requirements for first year of operations for the proposed Teflon tapes manufacturing unit.

Table 12: Raw Material Requirements (Year 1)

Description	Raw Material Required (Kg)	Unit Cost (Kg)	Total Raw Material Cost (Rs.)
Polytetrafluoroethylene (PTFE)	27,930	1,275	35,610,906

Polypropylene	162,518	175	28,440,720
Total			64,051,626

9.9 Human Resource Requirement

In order to run operations of Teflon Tapes Manufacturing Unit smoothly, details of human resources required along with number of employees and monthly salaries are recommended as under.

Table 13: Human Resource Requirement

Description	No. of Employees	Monthly Salary per person (Rs.)	Total Monthly Salaries (Rs.)
Owner / Manager	1	60,000	60,000
Polymer Engineer	1	50,000	50,000
Accountant	1	35,000	35,000
Sales Executives	1	25,000	25,000
Skilled Labour	8	25,000	200,000
Warehouse / Loading In-charge	1	20,000	20,000
Security Guards	2	20,000	40,000
Driver	1	25,000	25,000
Sweeper	1	17,500	17,500
Total	17		472,500

9.10 Utilities and Other Costs

An essential cost to be borne by the project is the cost of electricity. The electricity expenses are estimated to be around Rs. 692,418 per month. Furthermore, promotional expense being essential for marketing of Teflon Tapes Manufacturing Unit is estimated as 0.8% of revenue.

9.11 Revenue Generation

Based on the capacity utilization of 55%, sales revenue during the first year of operations is estimated as under.

Table 14: Revenue Generation – Year 1

Description	Total Production (Meters)	Finished Goods Inventory	Wastage	Quantity Sold (Meter)	Price per Meters (Rs.)	Sales Revenue (Rs.)
Teflon Tape	68,428,800	2,851,200	3,421,440	62,156,160	1.5	99,234,240

10 CONTACT DETAILS

In order to facilitate potential investors, contact details of private sector Service Providers relevant to the proposed project be given.

Table 15: Machinery Suppliers

Name of Supplier	Phone	Email
Engr. Ch. Wajahat Ghulam Rasool	+92 316 4581 334	www.polymermarkets.com
Anyang Industrial Zone, Ruian City, Wenzhou, Zhejiang, China	+86 139 5882 3303	linda@xuanhai_machine.com

11 USEFUL WEB LINKS

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

Trade Development Authority of Pakistan (TDAP)	www.tdap.gov.pk
Security Commission of Pakistan (SECP)	www.secp.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
State Bank of Pakistan (SBP)	www.sbp.org.pk
Punjab Small Industries Corporation	www.psic.gop.pk
Sindh Small Industries Corporation	www.ssic.gos.pk
Punjab Vocational Training Council (PVTC)	www.pvtc.gop.pk
Punjab Industrial Estates (PIE)	www.pie.com.pk
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	www.fiedmc.com.pk
Pakistan Plastic Manufacturers Association	www.pakplas.com.pk/

12 ANNEXURES

12.1 Income Statement

Calculations										
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	93,234,240	111,881,088	133,324,963	157,938,803	186,142,160	218,406,801	255,262,949	297,306,258	327,036,884	359,740,572
<i>Cost of sales</i>										
Raw Material Cost	64,051,626	76,861,951	91,593,825	108,503,455	127,879,072	150,044,777	175,364,833	204,248,453	224,673,298	247,140,628
Direct labour	2,943,000	3,237,300	3,561,030	3,917,133	4,308,846	4,739,731	5,213,704	5,735,074	6,308,582	6,939,440
Machinery maintenance	1,140,480	1,368,576	1,630,886	1,931,973	2,276,968	2,671,643	3,122,483	3,636,774	4,000,451	4,400,496
Direct electricity	8,256,420	9,082,062	9,990,268	10,989,295	12,088,225	13,297,047	14,626,752	16,089,427	17,698,370	19,468,206
Total cost of sales	76,391,526	90,549,889	106,776,010	125,341,856	146,553,111	170,753,198	198,327,772	229,709,728	252,680,701	277,948,771
Gross Profit	16,842,714	21,331,199	26,548,953	32,596,947	39,589,049	47,653,603	56,935,177	67,596,530	74,356,183	81,791,801
<i>General administration & selling expenses</i>										
Administration expense	2,430,000	2,673,000	2,940,300	3,234,330	3,557,763	3,913,539	4,304,893	4,735,383	5,208,921	5,729,813
Administration benefits expense	182,250	200,475	220,523	242,575	266,832	293,515	322,867	355,154	390,669	429,736
Electricity expense	52,599	57,859	63,644	70,009	77,010	84,711	93,182	102,500	112,750	124,025
Water expense	88,290	97,119	106,831	117,514	129,265	142,192	156,411	172,052	189,257	208,183
Travelling expense	364,500	400,950	441,045	485,150	533,664	587,031	645,734	710,307	781,338	859,472
Communications expense (phone, fax, mail, internet, etc.)	147,150	161,865	178,052	195,857	215,442	236,987	260,685	286,754	315,429	346,972
Office vehicles running expense	161,436	177,580	195,338	214,871	236,358	259,994	285,994	314,593	346,052	380,658
Office expenses (stationary, entertainment, janitorial services, etc.)	235,440	258,984	284,882	313,371	344,708	379,178	417,096	458,806	504,687	555,155
Promotional expense	699,257	629,331	566,398	509,758	458,782	412,904	371,614	334,452	301,007	270,906
Professional fees (legal, audit, consultants, etc.)	932,342	1,118,811	1,333,250	1,579,388	1,861,422	2,184,068	2,552,629	2,973,063	3,270,369	3,597,406
Depreciation expense	4,274,481	4,274,481	4,274,481	4,285,798	4,283,973	4,415,385	4,428,486	4,426,374	4,426,374	4,441,541
Amortization of pre-operating costs	240,000	240,000	240,000	240,000	240,000	-	-	-	-	-
Bad debt expense	466,171	559,405	666,625	789,694	930,711	1,092,034	1,276,315	1,486,531	1,635,184	1,798,703
Miscellaneous expense 1	243,000	267,300	294,030	323,433	355,776	391,354	430,489	473,538	520,892	572,981
Subtotal	10,516,916	11,117,159	11,805,397	12,601,747	13,491,708	14,392,892	15,546,396	16,829,507	18,002,930	19,315,551
Operating Income	6,325,798	10,214,040	14,743,556	19,995,199	26,097,342	33,260,711	41,388,781	50,767,023	56,353,253	62,476,250
Other income (interest on cash)	38,661	144,660	342,912	559,769	783,100	1,026,230	1,311,075	1,636,648	1,982,154	2,675,939
Other income 2										
Gain / (loss) on sale of computer equipment	-	-	45,625	-	-	98,442	-	-	159,584	127,403
Gain / (loss) on sale of office vehicles	-	-	-	-	430,496	-	-	-	-	-
Earnings Before Interest & Taxes	6,364,460	10,358,699	15,132,093	20,554,968	27,310,938	34,385,383	42,699,856	52,403,671	58,494,991	65,279,592
Earnings Before Tax	6,364,460	10,358,699	15,132,093	20,554,968	27,310,938	34,385,383	42,699,856	52,403,671	58,494,991	65,279,592
Tax	1,347,561	2,745,544	4,416,232	6,314,239	8,678,828	11,154,884	14,064,949	17,461,284	19,593,246	21,967,857
NET PROFIT/(LOSS) AFTER TAX	5,016,899	7,613,155	10,715,861	14,240,730	18,632,110	23,230,499	28,634,907	34,942,386	38,901,744	43,311,735

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											
<i>Current assets</i>											
Cash & Bank	1,174,976	1,917,930	9,654,840	17,778,115	27,003,408	35,644,629	46,453,774	58,432,192	72,499,622	86,072,710	128,002,380
Accounts receivable		3,831,544	4,214,699	5,038,481	5,984,872	7,070,157	8,312,650	9,732,940	11,354,162	12,828,969	14,111,866
Finished goods inventory		3,504,198	4,153,665	4,897,982	5,749,626	6,722,620	7,832,716	9,097,604	10,537,143	11,590,858	12,749,944
Equipment spare part inventory	47,520	59,875	74,919	93,188	115,320	142,074	174,351	213,221	246,270	284,442	-
Raw material inventory	2,668,818	3,522,839	4,617,855	6,017,421	7,801,156	10,068,692	12,944,562	16,584,269	20,066,965	24,281,028	-
Total Current Assets	3,891,313	12,836,387	22,715,977	33,825,186	46,654,382	59,648,171	75,718,053	94,060,226	114,704,163	135,058,007	154,864,189
<i>Fixed assets</i>											
Land	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000	2,800,000
Building/Infrastructure	9,281,400	8,817,330	8,353,260	7,889,190	7,425,120	6,961,050	6,496,980	6,032,910	5,568,840	5,104,770	4,640,700
Wapda Security	603,000	603,000	603,000	603,000	603,000	603,000	603,000	603,000	603,000	603,000	603,000
Machinery & equipment	34,771,875	31,294,688	27,817,500	24,340,313	20,863,125	17,385,938	13,908,750	10,431,563	6,954,375	3,477,188	-
Furniture & fixtures	538,000	484,200	430,400	376,600	322,800	269,000	215,200	161,400	107,600	53,800	-
Office vehicles	1,076,240	860,992	645,744	430,496	215,248	1,733,295	1,386,636	1,039,977	693,318	346,659	-
Computer equipment	182,500	122,275	62,050	213,092	141,549	71,831	246,680	163,860	83,153	285,563	189,689
Office equipment	39,500	35,550	31,600	27,650	23,700	19,750	15,800	11,850	7,900	3,950	-
Total Fixed Assets	49,292,515	45,018,035	40,743,554	36,680,340	32,394,542	29,843,863	25,673,046	21,244,560	16,818,186	12,674,930	8,233,389
<i>Intangible assets</i>											
Pre-operation costs	1,200,000	960,000	720,000	480,000	240,000	-	-	-	-	-	-
Total Intangible Assets	1,200,000	960,000	720,000	480,000	240,000	-	-	-	-	-	-
TOTAL ASSETS	54,383,828	58,814,421	64,179,531	70,985,526	79,288,924	89,492,035	101,391,099	115,304,786	131,522,349	147,732,936	163,097,578
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable		417,074	494,363	587,937	701,504	839,645	1,008,022	1,213,634	1,418,752	1,651,898	706,593
Total Current Liabilities	-	417,074	494,363	587,937	701,504	839,645	1,008,022	1,213,634	1,418,752	1,651,898	706,593
<i>Shareholders' equity</i>											
Paid-up capital	54,383,828	54,383,828	54,383,828	54,383,828	54,383,828	54,383,828	54,383,828	54,383,828	54,383,828	54,383,828	54,383,828
Retained earnings		4,013,519	9,301,339	16,013,760	24,203,592	34,268,562	45,999,249	59,707,324	75,719,768	91,697,210	108,007,156
Total Equity	54,383,828	58,397,348	63,685,168	70,397,588	78,587,420	88,652,390	100,383,077	114,091,153	130,103,597	146,081,039	162,390,985
TOTAL CAPITAL AND LIABILITIES	54,383,828	58,814,421	64,179,531	70,985,526	79,288,924	89,492,035	101,391,099	115,304,786	131,522,349	147,732,936	163,097,578

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		5,016,899	7,613,155	10,715,861	14,240,730	18,632,110	23,230,499	28,634,907	34,942,386	38,901,744	43,311,735
Add: depreciation expense		4,274,481	4,274,481	4,274,481	4,285,798	4,283,973	4,415,385	4,428,486	4,426,374	4,426,374	4,441,541
amortization of pre-operating costs		240,000	240,000	240,000	240,000	240,000	-	-	-	-	-
Accounts receivable		(3,831,544)	(383,154)	(823,782)	(946,391)	(1,085,285)	(1,242,493)	(1,420,290)	(1,621,222)	(1,474,807)	(1,282,897)
Finished goods inventory		(3,504,198)	(649,466)	(744,317)	(851,644)	(972,993)	(1,110,096)	(1,264,889)	(1,439,539)	(1,053,714)	(1,159,086)
Equipment inventory	(47,520)	(12,355)	(15,044)	(18,269)	(22,132)	(26,754)	(32,277)	(38,870)	(33,049)	(38,172)	284,442
Raw material inventory	(2,668,818)	(854,022)	(1,095,016)	(1,399,565)	(1,783,735)	(2,267,536)	(2,875,870)	(3,639,706)	(3,482,696)	(4,214,063)	24,281,028
Accounts payable		417,074	77,290	93,574	113,567	138,141	168,377	205,612	205,118	233,146	(945,304)
Cash provided by operations	(2,716,338)	1,746,334	10,062,245	12,337,981	15,276,192	18,941,656	22,553,525	26,905,249	32,997,372	36,780,508	68,931,460
<i>Financing activities</i>											
Issuance of shares	54,383,828	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares											
Cash provided by / (used for) financing activities	54,383,828	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(50,492,515)	-	-	(211,267)	-	(1,733,295)	(244,567)	-	-	(283,117)	-
Acquisitions											
Cash (used for) / provided by investing activities	(50,492,515)	-	-	(211,267)	-	(1,733,295)	(244,567)	-	-	(283,117)	-
NET CASH	1,174,976	1,746,334	10,062,245	12,126,715	15,276,192	17,208,361	22,308,957	26,905,249	32,997,372	36,497,391	68,931,460

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Description	Details
Travelling Expense	15% of Administration Expense
Communication Expense	5 % of Direct Staff Salaries
Promotional Expenses	0.8% of Revenue
Depreciation Method	Accelerated depreciation
Depreciation Rate	10% on Machinery 33% on Computer Equipment 10% on Furniture & Fixture
Inflation Growth Rate	10%
Electricity Price Growth Rate	10%
Salaries Growth Rate	10%
Water Price Growth Rate	10%

13.2 Revenue Assumptions

Description	Details
Sale Price Growth Rate	10%
Maximum Capacity Utilization	90%
Shift Length (Hours)	8
Days Operational / Year	300

13.3 Production Cost Assumptions

Description	Details
Maximum Operational Capacity in Meters	124,416,000
Production Capacity Utilization – Year 1 (55%)	68,428,800
Output of Tapes Per Kg. of Raw Material (Meters)	2,450
Production Capacity Utilization Growth Rate	5%