



Pre-feasibility Study

HEAT SUBLIMATION PRINTING UNIT

November 2020

“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

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1. DISCLAIMER

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Document Control

Document No.	269
Prepared by	SMEDA-Punjab (OS)
Revision Date	December 2022
For information	helpdesk.punjab@smeda.org.pk

2. EXECUTIVE SUMMARY

Hosiery refers to knitted undergarments, stockings and socks. A large variety of hosiery products are manufactured by knitting process in different designs. Knitting is a process of production of fabric by employing continuous sets of yarn to form a series of interlocking loops. Knitting process is very old and can be performed both manually and through machines. Nowadays, large manufacturing units use knitting machinery to produce fabric from yarn.

The proposed Hosiery Knitwear Unit uses knitting machinery to manufacture the proposed hosiery knitwear products using cotton yarn, purchased from the market. Yarn is converted into knit fabric on circular knitting machines. The fabric is then dyed and the finished fabric is then cut, stitched, ironed, labelled, packed and shipped to the customer.

The proposed business unit manufacture four types of undergarment products for men, used in everyday life. These products include inner vest (white banyan) with sleeves, inner vest (white banyan) without sleeves, boxer underwear and brief underwear. These products are manufactured in three sizes; small, medium and large.

The above-mentioned mentioned products are used regularly by all men, irrespective of the season. In both urban and rural areas demand for vests (banyan) is very high. In cities, the use of pants and trousers increases the use and demand of underwear. Therefore, the use of the above-mentioned products by men which are approximately 50% of total population. The project thus presents a viable financial investment opportunity for the prospective investors.

The proposed manufacturing unit would ideally be located in major cities of Pakistan like Lahore, Karachi, Multan, Gujranwala, Faisalabad, Rawalpindi and other major cities of Pakistan. These cities have been proposed due to presence of large urban population, availability of required resources, availability of good infrastructure and qualified personal.

The capacity of proposed manufacturing unit is based on dyeing machine. The proposed manufacturing unit operates in a single shift of 10 hours a day for 280 days in a year. Further, it is assumed that the operational capacity for the manufacturing unit is 70% during the first year of its operations. The capacity increases at the rate of 5% per annum attaining a capacity of maximum of 90% of its total manufacturing capacity during the projected period of 10 years.

At maximum capacity, the manufacturing unit produces four products which include 30,800 white vests with sleeves (11,480 small size, 11,760 medium size and 7,560 large size), 50,960 white vests without sleeves (19,320 small size, 19,320 medium size and 12,320 large size), 50,960 boxer underwear (15,400 small size, 24,080 medium size and 11,480 large size) and 95,200 brief underwear (43,120 small size, 32,760 medium size and 19,320 large size).

The initial year manufacturing capacity of the proposed manufacturing unit is assumed to be 70% at which the proposed unit will manufacture four products which include

21,560 white vests (8,036 small size, 8,232 medium size and 5,292 large size), 35,672 white vests without sleeves (13,524 small size, 13,524 medium size and 8,624 large size), 35,672 boxer underwear (10,780 small size, 16,856 medium size and 8,036 large size) and 66,640 brief underwear (30,184 small size, 22,932 medium size and 13,524 large size).

This manufacturing unit will be set up in a rented building with an area of 4,050 square feet (18 Marla). The proposed business requires a total investment of PKR 64.20 million. This includes capital investment of PKR 58 million and working capital of PKR 6.20 million. The project will be established using 100% equity financing. The Net Present Value (NPV) of project is PKR 6.19 million with an Internal Rate of Return (IRR) of 27% and a Payback period of 4.20 years. Further, this project is expected to generate Gross Annual Revenues of PKR 62.57 million during 1st year, Gross Profit (GP) ratio ranging from 43% to 53% and Net Profit (NP) ratio ranging from 6% to 22% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 56% (127,028 products) with annual breakeven revenue of PKR 49.82 million.

The proposed project may also be established using leveraged financing. At 50% financing at a cost of KIBOR+3%, the proposed business provides Net Present Value (NPV) of PKR 17.82 million, Internal Rate of Return (IRR) of 28% and Payback period of 4 years. Further, this project is expected to generate Net Profit (NP) ratio ranging from 6% to 22% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 57% (130,936 products) with breakeven revenue of PKR 51.35 million.

The proposed project will provide employment opportunities to 42 people. High return on investment and steady growth of business is expected to the entrepreneur having some prior experience or education in the related field of business. The legal business status of this project is proposed as "Sole Proprietorship" or "Partnership concern".

3. INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with the 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 'sectorial 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.

National Business Development Program for SMEs (NBDP) is a project of SMEDA, funded through Public Sector Development Program of Government of Pakistan.

The NBDP envisages provision of handholding support / business development services to SMEs to promote business startup, improvement of efficiencies in existing SME value chains to make them globally competitive and provide conducive business environment through evidence-based policy-assistance to the Government of Pakistan. The Project is objectively designed to support SMEDA's capacity of providing an effective handholding to SMEs. The proposed program aimed at facilitating around 314,000 SME beneficiaries over a period of five years.

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 setting up a “Hosiery Knitwear Unit” by providing a general understanding of the business with the intention of supporting them in 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 setup 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 & PRODUCTS

Hosiery knitwear is an important value-added subsector of Textile. The term 'Hosiery' refers to knitted undergarments, stockings and socks. Hosiery products are manufactured through knitting process in several shapes, designs and sizes.

Knitting is a method of converting yarn into fabric. It may be done manually or by machine. Knitting is thought to have originated in the 5th century in the Middle East. Knitting machines were used to make hosiery for the upper classes by the 16th century. Hats, shawls, bags, jumpers and other knitting-related products were quickly produced. Knitwear became the mainstream fashion for both men and women in the twentieth century. Knitting is now considered a regularly adopted process to make large variety of products.

The proposed business unit produces its own knitted fabric which manufacture the target hosiery products. The proposed project manufactures four types of hosiery knitwear products in three sizes, these three sizes large, medium and small. The four target hosiery knitwear products are listed below and explained in the following paragraphs:

1. Inner Vest (White Banyan) without Sleeves
2. Inner Vest (White Banyan) with Sleeves
3. Boxer Underwear
4. Brief Underwear

1. Inner Vest (White Banyan) with sleeves and without Sleeves

Vest or inner vest is an undergarment worn on the upper part of the body by men which may or may not have sleeves. It is known as 'Banyan' in Urdu. These undergarments are used widely round the year in all parts of the country. Vests are normally produced in white color. The proposed unit produces two types of inner vests, vest with sleeves and vests without sleeves. Details of the vests, along with the required fabric for each type of vests produced by the proposed project are shown in Table 1 and Table 2.

Table 1: Inner Vest (White Banyan) Without Sleeves

Sizes	Average Fabric Required (Meter)
Small	0.9 m
Medium	1.2 m
Large	1.4 m

Table 2: Inner Vest (White Banyan) With Sleeves

Sizes	Average Fabric Required (Meter)
Small	1 m

Medium	1.3 m
Large	1.5 m

Figure 1 shows inner vest (white banyan) without sleeves and Figure 2 shows inner vest (white banyan) with sleeves.

Figure 1: Inner Vest (White Banyan) Without Sleeves



Figure 2: Inner Vest (White Banyan) with Sleeves



2. Boxer Underwear

Underwear comes under the category of undergarments and is usually used to wear under pants and trousers. These are used by men and boys while wearing school uniforms, college uniforms, and by people wearing formal dresses while going to universities, offices, public places, etc.

Boxer underwear's may be made from plain comfortable cotton or brightly colored silk. This type of underwear give a man the loosest fit. These have a fly front with an elastic waistband. These are designed after the shorts that are worn in the ring by

professional boxers. It loosely covers the body from the waist to just above mid-thigh. Figure 3 shows a boxer underwear.

Figure 3 Boxer Underwear



Table 3 shows fabric requirement for three sizes of boxer underwear.

Table 3: Boxer Underwear

Sizes	Average Fabric Required (Meter)
Small	0.5 m
Medium	0.8 m
Large	1 m

- **Brief Underwear**

Briefs have been one of the most popular men's underwear types since 1930s. This is the classic style of men's underwear and fits from their waist to the top of their thigh. The length of this underwear is shorter than that of boxer. It has a full rise, meaning it covers the body from the waist to the top of the thigh. Briefs have either an overlap fly or a contour pouch.

While boxers are loose-fitting and provide minimal support, men's briefs conform with the body tightly. It is used with pants and trousers. Figure 4 shows brief under wear.

Figure 4 Brief Underwear



Table 4 shows the required fabric for the three sizes of brief underwear.

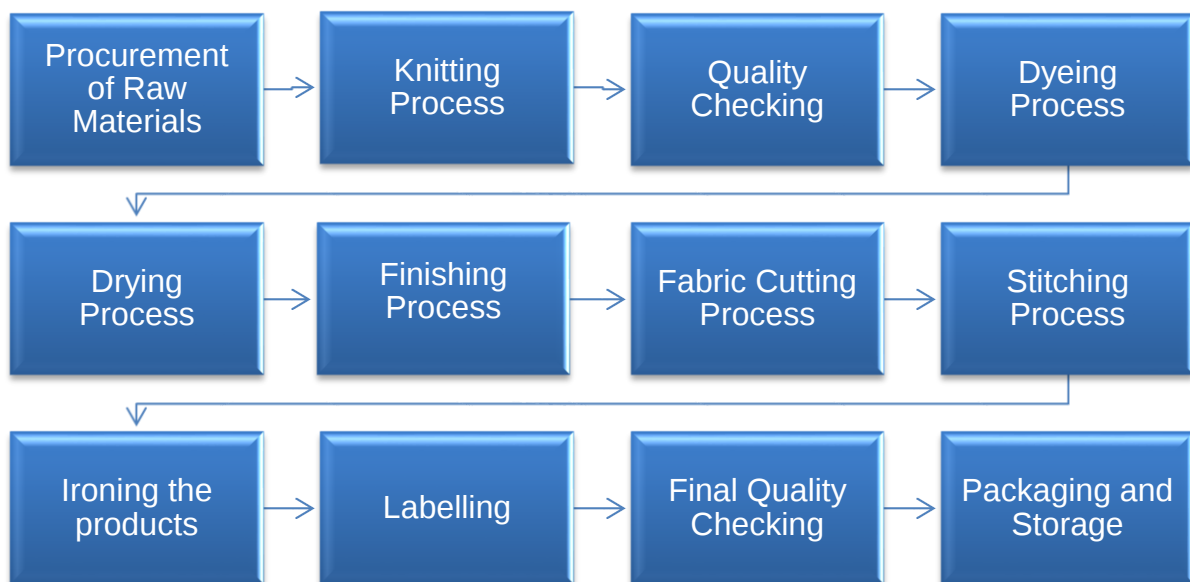
Table 4: Brief Under Wear

Sizes	Average Fabric Required (Meter)
Small	0.4 m
Medium	0.7 m
Large	0.9 m

5.1. Process Flow for Hosiery Knitwear Unit

A general process flow of a hosiery knitwear unit is shown in Figure 5.

Figure 5: Process Flow for Hosiery Knitwear Unit



The brief description of process flow is as follows:

Procurement of Raw Materials

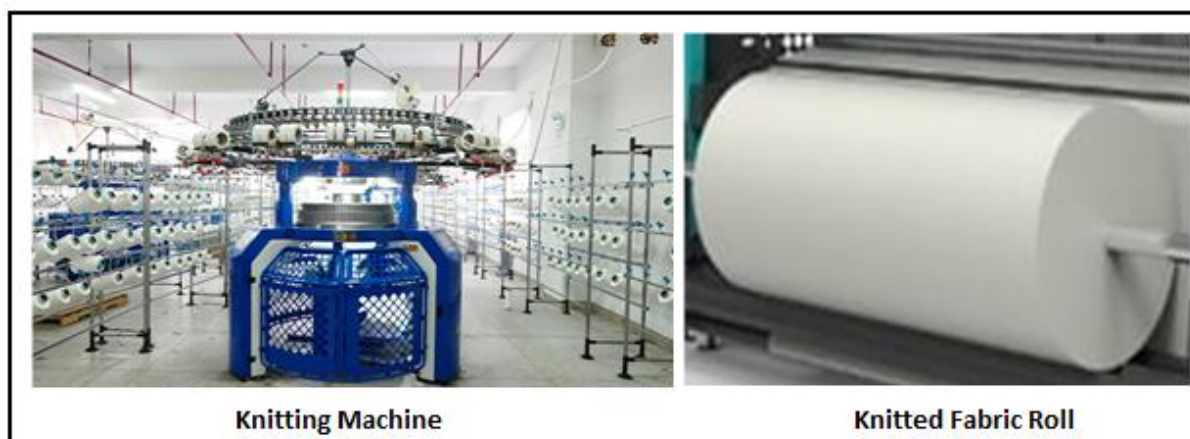
12/2 count¹ yarn is used for the production of the knitted fabric used for making men's undergarments. Yarn is purchased from local market by Procurement Manager. Other consumables include thread, sticker, elastic and bleach are also procured from the local market. The quality of product is mainly dependent on the quality of raw materials. All these materials will be stored in raw materials store. Figure 6 shows the raw material and consumables.

¹ Count means thickness of the yarn.

Figure 6: Raw Material and Consumables**Knitting Process**

Knitting is a fabric manufacturing process, usually done on a circular knitting machine. Knitting is considered to be the second most frequently used method of fabric construction, after weaving. In this process, yarns are interloped to make thick yet flexible and elastic fabric. It is one of the several ways to turn yarn into cloth. It is similar to crochet in the sense that it consists of loops pulled through other loops. In other words, knitting is the process of construction of a fabric made of interlocking loops of yarn by means of needles. The loops may be either loosely or closely constructed, according to the design parameters of the fabric, driven by its final use.

The fiber cone is attached to the creel of circular knitting machine for making fabric. Yarn through the mechanical process of the knitting machine is then interconnected into loops with the help of needles present in the machine. This interconnecting yarn is converted into fabric by the machine. The fabric is made on the machine in a tubular form as 30 kg rolls. The rolls are picked by labor and transferred to quality inspection machine. The capacity of the circular knitting machine used in the proposed unit is producing 300 kg fabric of yarn per 8 hours. Figure 7 shows knitting machine and knitted fabric roll.

Figure 7 Knitting Machine and Knitted Fabric Roll

Quality Checking

After the fabric is knitted, the fabric undergoes different quality checks. The main quality check is done through the use of two sides tubular fabric inspection machine. In this machine, the knitted fabric is placed and a quality checker monitors the quality of fabric through the two mirrors of the machine. The fabric is passed between these mirrors and from both sides the fabric is visible in the mirrors and from passing of fabric any damaged fabric is identified. In case of damage, the whole fabric roll of 30 kg is rejected. Figure 8 shows two sides tubular fabric inspection machine.

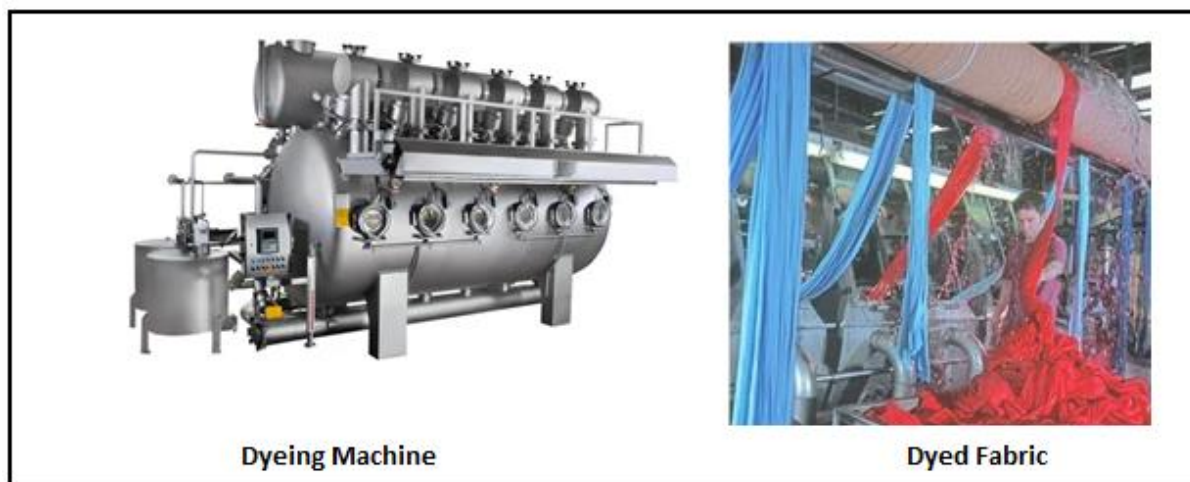
Figure 8: Two Sides Tubular Fabric Inspection Machine



Dyeing Process

The process of applying to fiber stock, yarn or fabric is called dyeing. A dyeing process is the interaction between a dye and a fiber, as well as the movement of dye into the internal part of the fiber. Dyeing process involves adsorption (transfer of dyes from the aqueous solution onto the fiber surface) and diffusion (dyes diffused into the fiber).

Initially, the desired amount of bleach is added into the dyeing machine. Fabric in the form of rope structure is inserted to the machine. The fabric moves in circular path inside the machine. While moving in circular path, the fabric passes through the dye tank where dye from the aqueous solution transfers into the fabric. This circular path process is repeated from 3 to 4 times. This complete process takes 3.2 hours. For this process, almost 8 rolls of 30 kg fabric rolls are combined together for dyeing. Figure 9 shows dyeing machine and dyed fabric.

Figure 9 Dyeing Machine and Dyed Fabric**Drying Process**

After dyeing, the fabric is transferred by labor to the drying machine where the fabric roll is placed in the machine and passed through different heat terminals. When the fabric is passed through terminals, water evaporates and causes the color to create a strong bond with the fabric and remains permanent. This process also causes the fabric to shrink. The capacity of this drying machine is 250 kg of fabric per 2 hours. This is operated for 2 hours per day. Figure 10 shows drying machine.

Figure 10: Drying Machine**Finishing Process**

After drying of fabric, it is sent for finishing which involves making it fit for cutting and stitching process and converting into final product. When fabric shrinks in the drying process, its shrinkage is removed in the finishing process. All this is done by passing the fabric from finishing machine. Inside the machine, fabric passes through two rollers

which contain hot steam and helps the fabric in spirality² and moisture control. The temperature, depending upon the type of fabric, is set in the machine to avoid the risk of fabric getting damaged during the finishing process. During this process, the width of the fabric is also increased. When finishing is complete, quality check is performed to ensure that finishing of fabric has been done as per the required standards. Figure 11 shows finishing machine.

Figure 11 Finishing Machine



Fabric Cutting Process

The first step of cutting process is making initial design in different sizes on paper. This paper, is then placed on the layers of finished fabric. By using cutting machine, the labor cuts the fabric according to the size and design drawn on the paper. Figure 12 shows fabric cutting machine.

Figure 12. Fabric Cutting Machine



² Spirality is a test that determines change in skewness in woven and knitted fabrics or twist in garments when subjected to repeated automatic laundering procedures commonly used in the home.

Stitching Process

The proposed business unit has four stitching machines, one designated to each product. Each machine is operated by experienced skilled labor to stitch the final products. Figure 13 shows an industrial stitching machine.

Figure 13 Industrial Stitching Machine



Ironing the Products

After the stitching process, final products are ironed by steam ironing machine which accurately presses the products and makes perfect alignment of final product. The ironing removes all the wrinkles and makes the perfect shape of the product. Figure 14 shows steam ironing machine.

Figure 14: Steam Ironing Machine



Labelling

Labelling is very important for identification of product brand and producer/manufacturer of the product. Small label of 2-3 inch is attached to the product by iron label machine. The label is attached by pressing it onto the product. It is done manually by the labor. Figure 15 show labelling machine.

Figure 15 Labelling Machine

**Final Quality Checking**

After labelling, quality of the product is checked manually by the Quality Checker. During this process, size, label, pressing and finishing will be checked.

Packaging and Storage

The final products after passing of the quality test will be packed separately in plastic packs manually. The plastic packed products will be packed in cartons for storing and dispatching. All sales are on credit basis of 10 days. The product will be delivered to the customer using loader rickshaw after sale agreement. Figure 16 shows the plastic packing and Figure 17 shows carton for packaging.

Figure 16 Products in Plastic Packing**Figure 17 Carton Pack****Wastage**

If any fault occurs in the knitting process, or there is any fault in the raw materials (cone or yarn), this leads to knitting wastage. There are various types of knitted fabric wastages due to defects in the fabric which may include barrenness, thick and thin places, holes, sinker marks, stains, stripes, etc.

Due to different types of dyeing faults also, wastages are generated. The most common dyeing faults are uneven dyeing, batch to batch shade variation, crease marks, selvedge to selvedge shade variation, etc. Due to these faults, wastage is generated in the dyeing process also. There will around 1% wastage during dyeing process.

Wastage of around 1%, 1% and 2% may also occur during drying, finishing and fabric cutting processes respectively.

5.2. Installed and Operational Capacities

The capacity of proposed manufacturing unit is based on dyeing machine. The proposed manufacturing unit operates in a single shift of 10 hours a day for 280 days in a year. Further, it is assumed that the operational capacity for the manufacturing unit is 70% during the first year of its operations. The capacity increases at the rate of 5% per annum attaining a capacity of maximum of 90% of its total manufacturing capacity during the projected period of 10 years.

At maximum capacity, the manufacturing unit produces four products which include 30,800 white vests with sleeves (11,480 small size, 11,760 medium size and 7,560 large size), 50,960 white vests without sleeves (19,320 small size, 19,320 medium size and 12,320 large size), 50,960 boxer underwear (15,400 small size, 24,080 medium size and 11,480 large size) and 95,200 brief underwear (43,120 small size, 32,760 medium size and 19,320 large size).

The initial year manufacturing capacity of the proposed manufacturing unit is assumed to be 70% at which the proposed unit will manufacture four products which include 21,560 white vests (8,036 small size, 8,232 medium size and 5,292 large size), 35,672 white vests without sleeves (13,524 small size, 13,524 medium size and 8,624 large size), 35,672 boxer underwear (10,780 small size, 16,856 medium size and 8,036 large size) and 66,640 brief underwear (30,184 small size, 22,932 medium size and 13,524 large size).

Table 5: Knitting Process

Capacity of Knitting Machine (kgs of fabric)	Capacity in rolls of 30kg (rolls)	Time Required to Knit one roll (hours)	Total hours required for knitting
300	10	0.8	8

Table 6: Dyeing Process

Total Rolls of 30kg Produced in a day	Time Required to dye Each roll	Dyeing Mach in Start Up Time	Total working hours in day	Available hours in a day for dyeing	Dyeing Machine per day (rolls)	Time required to dye one roll (Min)	Time required to dye one roll (hours)	Total hours required to dye 10 rolls	Total meter per kg	Total dyed meters per day	Wasatage in dye	Net meters after dyeing process	Total Rolls of 30kg Produced in a day
10	0.5	0.5	10	10	8	24	0.4	3	3	720	1%	713	10

Table 7: Drying Process

Total dyed meters in a day	Drying time per dyed meter (minutes)	Time required to dry one meter (hours)	Total hours required for drying dyed meters	Wasatage in drying	Net meters after drying process
713	0.13	0.002	1.5	1.0%	706

Table 8: Finishing Process

Total dried meters in a day	Finishing time per dried meter (minutes)	Time required to finish one meter (hours)	Total hours required for finish dried meters	Wasatage in finishing	Net meters after finishing process
706	0.07	0.001	0.8	1.0%	699

Table 9: Cutting Process

Total finished meters in a day	Cutting time per finished meter (minutes)	Time required to finish one meter (hours)	Total hours required for cutting finished meters	Wasatage in cutting	Net meters after cutting process
699	0.11	0.002	1.3	2%	685

Table 10: Installed Capacity-Required Cloth

Particulars	Meters Produced per day(kg) (Table 9)	Ratio (%)	Total Required Cloth in Meters per day(m)
White vest with sleeves	685	20%	137
White vest without sleeves		30%	206
Boxer Underwear		20%	137
Brief Underwear		30%	206
Total		100%	685

Table 11: Installed Capacity-Product Wise

Products	Product Wise Allocation of Cloth in Meters Per Day (m)	Production Ratio (%) of Different Sizes of Each Product	Allocation of Cloth Product Wise per day (m)	Size of Each Product in Meter(m)	Number of Products Produced per day (Pieces)	Annual Products Produced @ 100% Capacity	Products Produced @ Initial Capacity of 70%
White vest with sleeves							
Small	137	30%	41	1.00	41	11,480	8,036
Medium		40%	55	1.30	42	11,760	8,232
Large		30%	41	1.50	27	7,560	5,292
Subtotal (A)		100%				30,800	21,560
White vest without sleeves							
Small	206	30%	62	0.90	69	19,320	13,524
Medium		40%	82	1.20	69	19,320	13,524
Large		30%	62	1.40	44	12,320	8,624
Subtotal (B)		100%				50,960	35,672
Boxer Underwear							
Small	137	20%	27	0.50	55	15,400	10,780
Medium		50%	69	0.80	86	24,080	16,856
Large		30%	41	1.00	41	11,480	8,036
Subtotal (C)		100%				50,960	35,672

Brief Underwear							
Small	206	30%	62	0.40	154	43,120	30,184
Medium		40%	82	0.70	117	32,760	22,932
Large		30%	62	0.90	69	19,320	13,524
Subtotal(D)		100%				95,200	66,640
Total (A+B+C+D)						227,920	159,544

6. CRITICAL FACTORS

Before making the decision to invest in hosiery knitwear unit, one should carefully analyze the associated risk factors. The important considerations in this regard include:

- Technical know-how and relevant experience in the textile industry, especially knitwear production setups
- Sound technical knowhow and basic knowledge of the business
- Effective market linkages
- Availability of specialized workforce
- Rigorous supervision of the production process at every level
- Quality products and customer satisfaction
- Selection of appropriate distribution channel
- Accurate control of different quality parameters
- Regular checks on the machinery and equipment for proper working

7. GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The unit is proposed to be ideally located in any industrial areas of large cities like Karachi, Lahore, Gujranwala, Peshawar, Hyderabad, Sialkot, etc. Locating the proposed unit in these cities provides the advantage of being close to target customers/markets which helps in getting consistent orders. These cities also have a large population, which aids in the sale of hosiery knitwear products. Such units may also be established in other smaller cities where the basic requirements like availability of raw materials, skilled manpower, market access, etc. can be fulfilled. Entrepreneurs from rural areas come to the above-mentioned cities to buy stock of knitwear for their businesses.

8. POTENTIAL TARGET MARKETS/CUSTOMERS

Target customers for this proposed unit is general public which will be targeted by sale through retail market. The proposed business will also cater for the orders received through wholesaler or distributor market, if any, however the main target of the proposed unit will be retail market.

Pakistan is the fifth most populous country in the world, with 220 million people. The male population constitutes about 51% of the total population with growth rate of around 2%. Demand for hosiery knitwear product is increasing day by day in Pakistan due to increase in population and according to changing weather conditions. In most areas of Pakistan, the temperatures may range between 10 to 45 degrees Celsius, due to which the demand for these products in those areas is very high.

In Khyber Pakhtunkhwa especially in Peshawar, Mardan and Kohat people use white banyan throughout the year, but in the hilly areas these banyans are only used in summer and not in winter. In Punjab and Sindh, people also use white banyan throughout the year because of weather condition of these provinces, this shows high demand for these products. The roadside selling stalls of these products also highlights the demand of these products by low earning segment of the population.

Market for underwear is little bit different from that of banyan, because under wears are mostly used in urban areas/cities, where people use pants, trousers or jeans. For underwear, the target markets cities are Lahore, Karachi, Multan, Gujranwala, Faisalabad, Rawalpindi and Islamabad. Under wears are used throughout the year without any impact of weather which is a prime reason of high demand of underwear products.

9. PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of hosiery knitwear unit. Various assumptions relevant to revenue and costs 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 of this document.

All the figures in this financial model have been calculated after carefully considering the relevant assumptions and target market.

9.1. Initial Project Cost

Table 12 provides fixed and working capital requirements for establishment of hosiery knitwear unit.

Table 12: Initial Project Cost estimates

Particulars	Cost (PKR)	Reference
Land	-	9.1.1
Building / Infrastructure	421,260	9.1.2
Machinery & equipment	50,231,000	9.1.3
Office equipment	2,159,500	9.1.4
Furniture & fixtures	1,212,000	9.1.5
Office vehicles	1,913,000	9.1.6
Pre-operating costs	1,169,964	9.1.7
Security Against Building	900,000	9.1.8
Total Capital Cost - (A)	58,006,723	

Equipment spare part inventory	418,592	
Raw material inventory	408,333	
Other Raw Material Inventory	69,042	
Upfront building rent	300,000	
Cash	5,000,000	
Total Working Capital – (B)	6,195,967	
Total Project Cost - (A+B)	64,202,690	

9.1.1. Land

The proposed unit will be established on a rented land having an area of 4,050 square feet (18 Marla). Total rental cost has been estimated as PKR 300,000. The breakup of the space requirement is provided in Table 13.

Table 13: Breakup of Space Requirement

Production Area	Number	Length	Width	Area (Sq. Ft.)
Office Area	1	10	10	100
Staff Area	1	20	20	400
Production Hall	1	50	52	2600
Store Room-Raw Material	1	15	20	300
Store Room-Finished Goods	1	15	15	225
Outlet	1	10	10	100
Kitchen	1	10	10	100
Washrooms	6	6	6	225
Total Area				4,050

9.1.2. Building/ Infrastructure

There will be no cost of building construction since the hosiery knitwear unit will be started in a rented building having an area of 4,050 square feet. However, there will be a renovation cost required to make the building usable for the business. Building rent of PKR 300,000 per month has been included in the operating cost as well as it is also included in the capital investment. The proposed project requires electricity load of around 119.77 KW for which an industrial electricity connection will be required.

Table 14 provide details of building renovation cost.

Table 14: Building Renovation Cost

Cost Item	Unit of Measurement	Total Units	Cost/Unit (PKR)	Total Cost (PKR)
Paint Cost	Liter	91	800	72,612
Labour Cost	Sq.Feet	9,077	15	136,148
Tile Cost	Sq.Feet	825	120	99,000
Labour Cost-Tile	Sq.Feet	825	40	33,000
Glass Partition	Sq,Feet	30	550	16,500
Curtains	Units	6	6,000	36,000
Blinds	Units	4	7,000	28,000
Total				421,260

9.1.3. Machinery and Equipment

Table 15 provides details of machinery and equipment for the proposed project.

Table 15: Machinery and Equipment Cost Details

Cost Item	Number of Items	Unit Cost (PKR)	Total Cost (PKR)
Knitting Machine (300kg/8 hours)	1	1,500,000	1,500,000
Dyeing Machine (250kg/3 hours)	1	14,000,000	14,000,000
Drying Machine (250kg/2 hours)	1	26,000,000	26,000,000
Finishing Machine(250kg/hour)	1	730,000	730,000
Straight Knife Cutting Machine for Fabric	1	29,000	29,000
Industrial Stitching Machine (Overlock Machine)	5	990,000	4,950,000
Steam Ironing System	2	190,000	380,000
Labeling Machine	1	42,000	42,000
Two Sides Tubular Fabric Inspection Machine (50m/min)	1	1,400,000	1,400,000
Generator (125 KW)	1	1,200,000	1,200,000
Total (PKR)			50,231,000

9.1.4. Office Equipment

Table 16 shows details of equipment cost required for the hosiery knitwear unit.

Table 16: Office Equipment Cost Details

Cost Item	No.	Unit Cost (PKR)	Total Cost (PKR)
Air Conditioners	6	105,000	630,000
Laptop	4	150,000	600,000
Desktop Computer	7	75,000	525,000
Printer	2	51,500	103,000
Water Dispenser	4	20,000	80,000
Security System (6 Cams , 2 MP)	12	2,500	30,000
DVR	1	14,000	14,000
LED/LCD TV	1	36,000	36,000
WI-FI/ Internet Connection	1	3,500	3,500
Ceiling Fan	15	8,000	120,000
Exhaust Fan	4	4,500	18,000
Total			2,159,500

9.1.5. Furniture and Fixture

Table 17 provides details of furniture and fixtures.

Table 17: Furniture & Fixtures Cost Details

Cost Item	Number of Items	Unit Cost (PKR)	Total Cost (PKR)
Executive Table	1	60,000	60,000
Executive Chair	1	30,000	30,000
Staff Chairs	42	13,500	567,000
Staff Table	13	30,000	390,000
Visitor Chairs	5	15,000	75,000
Sofa Set	2	45,000	90,000
Total			1,212,000

9.1.6. Vehicles

Table 18 provides details of the vehicles required along with their cost for the proposed project.

Table 18: Office Vehicle Cost Details

Cost Item	Number of Vehicles	Unit Cost (PKR)	Registration Fee Plus Number Plate Charges	Total (PKR)
Loader Rickshaw	1	250,000	13,000	263,000
Motorcycle	2	111,500	13,000	236,000
Suzuki Pickup	1	1,400,000	14,000	1,414,000
Total Cost (PKR)				1,913,000

9.1.7. Pre-Operating Costs

Table 19 provides details of estimated pre-operating costs.

Table 19: Pre-Operating Cost Details

Costs Item	No.	Hiring Months Beforein Year 0	Unit Cost (per month) (PKR)	Cost (PKR)
Production Manager	1	1	175,000	175,000
Knitting Machine Operator-Skilled	1	1	40,000	40,000
Knitting Machine Operator-UnSkilled	1	1	25,000	25,000
Dyeing Machine Operator-Skilled	1	1	40,000	40,000
Dyeing Machine Operator-UnSkilled	1	1	25,000	25,000
Drying Machine Operator-Skilled	1	1	40,000	40,000
Drying Machine Operator-UnSkilled	1	1	25,000	25,000
Finishing Machine Operator-Skilled	1	1	40,000	40,000
Finishing Machine Operator-UnSkilled	1	1	25,000	25,000
Cutting Machine Operator	1	1	40,000	40,000
Stitching Machine Operator	1	1	40,000	40,000

Stream Pressing Machine Operator-Skilled	1	1	40,000	40,000
Stream Pressing Machine Operator-UnSkilled	1	1	25,000	25,000
Labeling Machine Operator	1	1	40,000	40,000
Packing Staff	1	1	25,000	25,000
Quality Checker	1	1	90,000	90,000
Procurement Officer	1	1	50,000	50,000
Office Boy	1	1	25,000	25,000
Security Guard	1	1	25,000	25,000
Sweeper	1	1	25,000	25,000
Utility expenses				309,964
Total Cost (PKR)				1,169,964

9.1.8. Security against Building

Table 20 provides details of estimated security against building.

Table 20: Security against Building

Particular	Months	Rent per month (PKR)	Total (PKR)
Security against building	3	300,000	900,000
Total (PKR)			900,000

9.2. Breakeven Analysis

Table 21 shows calculation of break-even analysis.

Table 21: Breakeven Analysis

Particulars	Amount First Year (PKR)	Profitability Ratio
Sales (PKR) – A	62,574,429	100%
Variable Cost (PKR) – B	38,544,794	62%
Contribution (PKR) (A-B) = C	24,029,635	38%
Fixed Cost (PKR) – D	19,132,290	31%

Contribution Margin	38%	
Breakeven Analysis		
Breakeven Revenue (PKR)		49,821,486
Break-Even (Products)		127,028
Breakeven Capacity		56%

9.3. Revenue Generation

Table 22, Table 23, Table 24, Table 25 and

Table 26 provides details regarding revenue generation from the hosiery knitwear unit during the first year of its operations.

Table 22: Revenue Details-White Vest with Sleeves

Products	Number of vests@70%	Price per vest (PKR)	Total Revenue (PKR)
Small	7,869	450	3,540,863
Medium	8,061	550	4,433,275
Large	5,182	650	3,368,138
Total (PKR)			11,342,275

Table 23: Revenue Details- White Vest without Sleeves

Products	Number of vests@70%	Price per vest (PKR)	Total Revenue (PKR)
Small	13,242	350	4,634,788
Medium	13,242	450	5,959,013
Large	8,444	550	4,644,383
Total (PKR)			15,238,183

Table 24: Revenue Details-Boxer Underwear

Products	Number of underwear@70%	Price per underwear (PKR)	Total Revenue (PKR)
Small	10,555	350	3,694,396
Medium	16,505	450	7,427,175

Large	7,869	550	4,327,721
Total (PKR)			15,449,292

Table 25: Revenue Details-Brief Underwear

Products	Number of underwear@70%	Price per underwear (PKR)	Total Revenue (PKR)
Small	29,555	250	7,388,792
Medium	22,454	350	7,858,988
Large	13,242	400	5,296,900
Total (PKR)			20,544,679

Table 26: Total Revenue

Products	Total Revenue (PKR)
White Vest with Sleeves	11,342,275
White Vest without Sleeves	15,238,183
Boxer Underwear	15,449,292
Brief Underwear	20,544,679
Total (PKR)	62,574,429

9.4. Variable Cost Estimate

Variable costs of the project have been provided in Table 27.

Table 27: Variable Cost Estimate

Description of Costs	Amount (PKR)
Raw Material Cost	9,800,000
Packing Cost for Vest	512,997
Packing Cost for Underwear	518,180
Consumables	2,282,846
Direct Utilities Cost	2,282,337
Direct Labor	15,240,000
Machinery Maintenance Cost	5,023,100
Communications expense (phone, mail, internet, etc.)	1,116,000

Office vehicles running expense	653,333
Office expenses (stationery, entertainment etc.)	1,116,000
Total Variable Cost (PKR)	38,544,794

Table 28: Material Cost

Cost Item	Total meters of cloth produced in 1kg yarn	Total Cloth Required per day (meters)	Number of Yarn Rolls Required for per day Production	Annual Number of Yarn Rolls Required (rolls)	Price per yarn roll(PKR)	Total Cost (PKR) @100%	Total Cost (PKR) @70%
Yarn(12/2 NM count)	3.6	900	250	70,000	200	14,000,000	9,800,000
Total (PKR)							9,800,000

Table 29: Packing Cost for Vest

Cost Item	Number of Packets required	Cost per pack (PKR)	Total Cost (PKR) (A)	No. of Packets in a carton	Total Number of Cartons required	Cost per carton (PKR)	Total Cost (PKR) (B)
Plastic Packets for Vest				Cartons for Vest			
Small	30,800	5	154,000	24	1,283	50	64,167
Medium	31,080	6	186,480	18	1,727		86,333
Large	19,880	8	159,040	12	1,657		82,833
Total (PKR)			499,520				233,333
Total (PKR) (C=A+B)							732,853
Total (PKR) @70% (D=C*60%)							512,997

Table 30: Packing Cost for Underwear

Cost Item	Number of Packets required	Cost per pack (PKR)	Total Cost (PKR) (A)	No. of Packets in a carton	Total Number of Cartons required	Cost per carton (PKR)	Total Cost (PKR) (B)
Plastic Packets for Underwear				Cartons for Underwear			
Small	58,520	3	175,560	36	1,626	50	81,278
Medium	56,840	3	170,520	30	1,895		94,733
Large	30,800	5	154,000	24	1,283		64,167
Total (PKR)			500,080				240,178
Total (PKR) (C=A+B)							740,258
Total (PKR) @70% (D=C*60%)							518,180

Table 31: Consumable Inventory

Cost Item	Total Cost (PKR)
Thread	1,324,568
Sticker	1,170,400
Elastic	696,240
Bleach	70,000
Total @100%(A)	3,261,208

Total @60% (B=A*70%)	2,282,846
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Table 32: Details of Thread Cost

Cost Item	Total Meters in One Thread Roll	Thread Required for one piece (meters)	Total Pieces Produced from one thread roll (pieces)	Total Rolls Required for Production (thread rolls)	Cost per thread roll (PKR)	Total Cost (PKR)
White Vest with Sleeves						
Small	900	40	23	510	180	91,840
Medium		42	21	549		98,784
Large		45	20	378		68,040
Subtotal (PKR) (A)			64	1,437		258,664
White Vest without Sleeves						
Small	900	35	26	751	180	135,240
Medium		37	24	794		142,968
Large		40	23	548		98,560
Subtotal (PKR) (B)			73	2,093		376,768
Boxer Underwear						
Small	900	25	36	428	180	77,000
Medium		27	33	722		130,032
Large		30	30	383		68,880

Subtotal (PKR) (C)			99	1,533		275,912
Brief Underwear						
Small	900	20	45	958	180	172,480
Medium		22	41	801		144,144
Large		25	36	537		96,600
Subtotal (PKR) (D)			122	2,296		413,224
Total (PKR)(A+B+C+D)						1,324,568

Table 33: Sticker

Cost Item	Sticker Required for one vest (stickers)	Total Stickers Required (stickers)	Cost per sticker (PKR)	Total Cost (PKR)
White Vest with Sleeves				
Small	2	22,960	10	229,600
Medium		23,520		235,200
Large		15,120		151,200
Subtotal (PKR) (A)		61,600		616,000
White Vest without Sleeves				
Small	2	38,640	10	386,400
Medium		38,640		386,400
Large		24,640		246,400

Subtotal (PKR) (B)		101,920		1,019,200
Total (PKR)(A+B)				1,170,400

Table 34: Elastic

Cost Item	Total Meters in One Elastic Roll	Elastic Required Per Piece (meters)	Total Pieces Produced from one elastic roll (pieces)	Total Rolls Required for Production (elastic rolls)	Cost per elastic roll (PKR)	Total Cost (PKR)
Boxer Underwear						
Small	7	0.30	23	660	90	59,400
Medium		0.40	18	1,376		123,840
Large		0.45	16	738		66,420
Subtotal (PKR) (A)			56	2,774		249,660
Brief Underwear						
Small	7	0.30	23	1,848	90	166,320
Medium		0.40	18	1,872		168,480
Large		0.45	16	1,242		111,780
Subtotal (PKR) (B)			56	4,962		446,580
Total (PKR)(A+B)						696,240

Table 35: Bleach

Cost Item	Required for 250kg per day (Liter)	Required per year (Liter)	Cost per Liter (PKR)	Total Cost (PKR)
Bleach	0.5	140	500	70,000

Table 36: Direct Labor

Personnel	Number of Personnel	Salary per Head (PKR)	Annual Salaries (PKR)
Production Manager	1	175,000	2,100,000
Knitting Machine Operator-Skilled	1	40,000	480,000
Knitting Machine Operator-UnSkilled	1	25,000	300,000
Dyeing Machine Operator-Skilled	1	40,000	480,000
Dyeing Machine Operator-UnSkilled	1	25,000	300,000
Drying Machine Operator-Skilled	1	40,000	480,000
Drying Machine Operator-UnSkilled	1	25,000	300,000
Finishing Machine Operator-Skilled	1	40,000	480,000
Finishing Machine Operator-UnSkilled	1	25,000	300,000
Cutting Machine Operator	1	40,000	480,000
Stitching Machine Operator	5	40,000	2,400,000
Stream Pressing Machine Operator-Skilled	2	40,000	960,000
Stream Pressing Machine Operator-UnSkilled	1	25,000	300,000
Labeling Machine Operator	1	40,000	480,000
Packing Staff	2	25,000	600,000
Quality Checker	3	90,000	3,240,000
Procurment Officer	1	50,000	600,000
Store Incharge	2	40,000	960,000
Total			15,240,000

Table 37: Vehicle Running Expenses

Particulars	Loader Rickshaw KM Per Year	Motorcycle KM Per Year	Suzuki Ravi Pickup KM per Year	Loader Rickshaw	Motorcycle	Suzuki Ravi Pickup
Fuel cost	25,200	22,400	8,400	210,000	140,000	105,000
Mileage (KM)				30	40	20
Oil & Tuning Cost per Year (PKR)				12,600	18,667	8,400
Oil & Tuning KM				2,000	1,200	3,000
No of Vehicles				1	2	1
Yearly Cost				222,600	317,333	113,400

Table 38: Variable Cost Assumption

Description of Costs	Rational
Machinery Maintenance Cost	10% of Cost of Machinery
Communication expense	15% of Management staff expense
Office expenses (stationery, entertainment, etc.)	15% of Management staff expense

9.5. Fixed Cost Estimate

Table 39 shows the estimated fixed cost of the project.

Table 39: Fixed Cost Estimate

Description of Costs	Amount (PKR)
Management Staff	7,440,000
Building rental expense	3,600,000
Indirect Utilities	1,437,226
Promotional expense	469,308
Depreciation expense	5,857,901
Amortization of pre-operating costs	233,993
Bad Debt Expense	93,862
Total Fixed Cost	19,132,290

Table 40: Management Staff

Personnel	Number of Personnel	Salary per Head (PKR)	Annual Salaries (PKR)
Mechanical Technician	1	40,000	480,000
Electrical Technician	1	40,000	480,000
Admin and HR Officer	1	50,000	600,000
Sales and Marketing Manager	1	135,000	1,620,000
Sales & Marketing Officer	1	60,000	720,000
Accountant	1	70,000	840,000
Office Boy	1	25,000	300,000
Security Guard	2	25,000	600,000
Sweeper	6	25,000	1,800,000
Total			7,440,000

Table 41: Fixed Cost Assumptions

Description of Costs	Rational
Promotional expense	0.75% of revenue
Bad Debt Expense	0.15% of revenue
Depreciation	
Building & infrastructure	10% of cost
Machinery & equipment	10% of cost
Office equipment, Furniture & Fixture, Office vehicles	15% of cost

9.6. Financial Feasibility Analysis

The financial feasibility analysis provides the information regarding projected Internal Rate of Return (IRR), Net Present Value (NPV) and Payback period of the study, which is shown in Table 42.

Table 42: Financial Feasibility Analysis

Description	Project
IRR	27%
NPV (PKR)	6,192,672

Payback Period (years)	4.20
Projection Years	10
Discount rate used for NPV	25%

9.7. Financial Feasibility Analysis with 50% Debt

The financial feasibility analysis provides the information regarding projected IRR, NPV and payback period of the study on the basis of Debt: Equity Model (50:50), which is shown in Table 43.

Table 43: Financial Feasibility Analysis with 50% Debt

Description	Project
IRR	28%
NPV (PKR)	17,820,029
Payback Period (years)	4.00
Projection Years	10
Discount rate used for NPV	22%

9.8. Human Resource Requirement

The proposed services shall require the workforce as provided in Table 44.

Table 44: Human Resource

Personnel	Number of Personnel	Salary per Head (PKR)	Annual Salaries (PKR)
Production Manager	1	175,000	2,100,000
Knitting Machine Operator-Skilled	1	40,000	480,000
Knitting Machine Operator-UnSkilled	1	25,000	300,000
Dyeing Machine Operator-Skilled	1	40,000	480,000
Dyeing Machine Operator-UnSkilled	1	25,000	300,000
Drying Machine Operator-Skilled	1	40,000	480,000
Drying Machine Operator-UnSkilled	1	25,000	300,000

Finishing Machine Operator-Skilled	1	40,000	480,000
Finishing Machine Operator-UnSkilled	1	25,000	300,000
Cutting Machine Operator	1	40,000	480,000
Stitching Machine Operator	5	40,000	2,400,000
Stream Pressing Machine Operator-Skilled	2	40,000	960,000
Stream Pressing Machine Operator-UnSkilled	1	25,000	300,000
Labeling Machine Operator	1	40,000	480,000
Packing Staff	2	25,000	600,000
Quality Checker	3	90,000	3,240,000
Mechanical Technician	1	40,000	480,000
Electrical Technician	1	40,000	480,000
Admin and HR Officer	1	50,000	600,000
Sales and Marketing Manager	1	135,000	1,620,000
Sales & Marketing Officer	1	60,000	720,000
Procurement Officer	1	50,000	600,000
Store Incharge	2	40,000	960,000
Accountant	1	70,000	840,000
Office Boy	1	25,000	300,000
Security Guard	2	25,000	600,000
Sweeper	6	25,000	1,800,000
Total	42		22,680,000

10. CONTACT DETAILS

The contact details of all the major suppliers of tools and equipment are given in Table 45.

Table 45: Contact Details

Name of Supplier	Products	Contact	Website/Email
Fujian Quanzhou Aotu Precision Machine Co., Ltd.	Knitting Machine	86-18868360623	www.knittingmachine.com.tw
Aleetex(China) Technology Co.,Ltd	Dyeing Machine	86-13914161206	www.mart.ecer.com/aleetex/contact-us.html
Qingdao Jingtian Textile Machinery Co., Ltd	Drying Machine	86-18669790395	www.textilemachinerychina.com
Dongguan Huli Mechanical Equipment Co., Ltd.	Finishing Machine	86-15818366699	www.dghuwei.en.alibaba.com
Nantong Zhongde Making Needle Co., Ltd.	Cutting Machine	86-513-17706276853	www.zdneedle.com
Dongguan BH Mechanical Equipment Company Limited	Stitching Machine	86-13128746865	www.gdbohong.en.alibaba.com
Yili (Zhaoqing) Intelligent Technology	Steam Ironing Machine	86-13827530181	www.alibaba.com/product-detail/Complete-Set-Steam-Ironing-Table-With_60829993198.html
Zhuzhou Intop Tungsten Carbide Co., Ltd.	Labeling Machine	86-15886366906	www.intopindustrial.com
Zhejiang Strength Machinery Co., Ltd.	Inspection Machine	86-13777818208	www.landkingparts.com
Conifer Handmades	Yarn	91-9320363500	www.coniferhandmadepaperexporter.com

11. USEFUL LINKS

Table 46: Useful Links

Name of Organization	E-mail Address
Small and Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
National Business Development Program (NBDP)	www.nbdp.org.pk
Government of Pakistan	www.pakistan.gov.pk
Government of Punjab	www.punjab.gov.pk
Government of Sindh	sindh.gov.pk/
Government of Balochistan	balochistan.gov.pk/
Government of KPK	kp.gov.pk/
Government of Gilgit Baltistan	gilgitbaltistan.gov.pk/
Government of Azad Jammu & Kashmir	ajk.gov.pk/
Trade Development Authority of Pakistan	www.tdap.gov.pk
Securities and Exchange Commission of Pakistan	www.secp.gov.pk
State Bank of Pakistan	www.sbp.gov.pk
Federal Board of Revenue	www.fbr.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
Pakistan Stock Exchange (PSX)	www.psx.com.pk
Pakistan Standards and Quality Control Authority (PSQCA)	http://www.psqca.com.pk
Punjab Small Industries Corporation	https://www.psic.gop.pk/
Sindh Small Industries Corporation	https://ssic.gos.pk/
Government of KPK	https://small_industries_de.kp.gov.pk/
Government of Balochistan Industries and Commerce	https://balochistan.gov.pk/departments-download/industries-and-commerce/
Pakistan Textile Sector	https://invest.gov.pk/textile
Pakistan Hosiery Manufacturers & Exporters Association	www.phmaonline.com/home.asp

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
White vest with sleeves	11,342,275	13,641,401	16,017,004	18,732,655	21,832,744	24,058,419	26,480,300	29,145,984	32,080,013	35,309,401
White vest without sleeves	15,238,183	18,327,026	21,518,614	25,167,052	29,331,978	32,322,141	35,575,903	39,157,210	43,099,036	47,437,672
Boxer Underwear	15,449,292	18,580,927	21,816,731	25,515,714	29,738,341	32,769,928	36,068,768	39,699,690	43,696,126	48,094,869
Brief Underwear	20,544,679	24,709,171	29,012,187	33,931,145	39,546,452	43,577,899	47,964,740	52,793,191	58,107,705	63,957,214
Total Revenue	62,574,429	75,258,526	88,364,535	103,346,567	120,449,515	132,728,387	146,089,711	160,796,075	176,982,880	194,799,157
<i>Cost of sales</i>										
Raw Material Cost-Yarn	9,800,000	11,557,000	13,568,432	15,867,715	18,492,422	20,353,993	22,402,961	24,658,193	27,140,451	29,872,590
Packing Cost for Vest	512,997	604,970	710,262	830,622	968,017	1,065,464	1,172,720	1,290,774	1,420,712	1,563,730
Packing Cost for Underwear	518,180	611,083	717,438	839,014	977,797	1,076,229	1,184,569	1,303,816	1,435,066	1,579,530
Consumables	2,282,846	2,692,127	3,160,677	3,696,280	4,307,688	4,741,329	5,218,623	5,743,964	6,322,190	6,958,623
Direct Utilities Cost	2,282,337	2,488,585	2,713,470	2,958,677	3,226,043	3,517,569	3,835,441	4,182,036	4,559,953	4,972,021
Direct Labor	15,240,000	16,718,280	18,339,953	20,118,929	22,070,465	24,211,300	26,559,796	29,136,096	31,962,297	35,062,640
Machinery Maintenance Cost	5,023,100	5,528,759	6,085,320	6,697,909	7,372,166	8,114,297	8,931,136	9,830,204	10,819,778	11,908,969
Total cost of sales	35,659,461	40,200,804	45,295,553	51,009,147	57,414,597	63,080,180	69,305,246	76,145,083	83,660,447	91,918,103
Gross Profit	26,914,968	35,057,722	43,068,982	52,337,420	63,034,918	69,648,207	76,784,465	84,650,992	93,322,433	102,881,054
<i>General administration & selling expenses</i>										
Management Staff	7,440,000	8,161,680	8,953,363	9,821,839	10,774,558	11,819,690	12,966,200	14,223,921	15,603,641	17,117,194
Building rental expense	3,600,000	3,960,000	4,356,000	4,791,600	5,270,760	5,797,836	6,377,620	7,015,382	7,716,920	8,488,612
Indirect Utilities	1,437,226	1,567,104	1,708,718	1,863,129	2,031,493	2,215,073	2,415,242	2,633,499	2,871,479	3,130,965
Communications expense (phone, mail, internet, etc.)	1,116,000	1,224,252	1,343,004	1,473,276	1,616,184	1,772,953	1,944,930	2,133,588	2,340,546	2,567,579
Office vehicles running expense	653,333	719,102	791,492	871,169	958,866	1,055,392	1,161,635	1,278,573	1,407,283	1,548,949
Office expenses (stationery, entertainment etc.)	1,116,000	1,224,252	1,343,004	1,473,276	1,616,184	1,772,953	1,944,930	2,133,588	2,340,546	2,567,579
Promotional expense	469,308	564,439	662,734	775,099	903,371	995,463	1,095,673	1,205,971	1,327,372	1,460,994
Depreciation expense	5,857,901	5,857,901	5,857,901	5,857,901	5,857,901	5,857,901	5,593,676	6,461,081	6,461,081	6,461,081
Amortization of pre-operating costs	233,993	233,993	233,993	233,993	233,993	-	-	-	-	-
Bad debt expense	93,862	112,888	132,547	155,020	180,674	199,093	219,135	241,194	265,474	292,199
Subtotal	22,017,623	23,625,610	25,382,756	27,316,301	29,443,984	31,486,354	33,719,039	37,326,797	40,334,343	43,635,153
Operating Income	4,897,345	11,432,112	17,686,226	25,021,119	33,590,934	38,161,853	43,065,426	47,324,196	52,988,090	59,245,901
Gain / (loss) on sale of office equipment	-	-	-	-	-	-	539,875	-	-	-
Gain / (loss) on sale of office vehicles	-	-	-	-	-	-	478,250	-	-	-
Earnings Before Interest & Taxes	4,897,345	11,432,112	17,686,226	25,021,119	33,590,934	38,161,853	44,083,551	47,324,196	52,988,090	59,245,901
Subtotal	-	-	-	-	-	-	-	-	-	-
Earnings Before Tax	4,897,345	11,432,112	17,686,226	25,021,119	33,590,934	38,161,853	44,083,551	47,324,196	52,988,090	59,245,901
Tax	984,403	3,288,831	9,000,868	5,925,808	14,462,053	15,947,602	11,520,065	12,492,259	22,465,832	24,656,065
NET PROFIT/(LOSS) AFTER TAX	3,912,942	8,143,281	8,685,358	19,095,311	19,128,880	22,214,251	32,563,486	34,831,937	30,522,259	34,589,836

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	5,000,000	10,705,839	19,151,239	26,239,366	37,474,389	45,572,783	53,527,315	55,398,804	65,040,643	70,070,206	83,844,620
Accounts receivable	-	2,234,801	2,687,804	3,155,876	3,690,949	4,301,768	4,740,300	5,217,490	5,742,717	6,320,817	6,957,113
Equipment spare part inventory	418,592	504,806	608,778	734,164	885,376	1,067,731	1,287,645	1,552,853	1,872,685	2,258,390	-
Raw material inventory	408,333	530,017	684,905	881,598	1,130,852	1,369,990	1,659,698	2,010,670	2,435,860	2,950,964	-
Packing and consumable inventory	69,042	89,617	115,806	149,063	191,208	231,642	280,626	339,970	411,862	498,957	-
Finished goods inventory	-	742,905	837,517	943,657	1,062,691	1,196,137	1,314,170	1,443,859	1,586,356	1,742,926	1,914,960
Pre-paid building rent	300,000	330,000	363,000	399,300	439,230	483,153	531,468	584,615	643,077	707,384	-
Total Current Assets	6,195,967	15,137,986	24,449,049	32,503,025	44,874,694	54,223,205	63,341,223	66,548,260	77,733,200	84,549,645	92,716,694
<i>Fixed assets</i>											
Land	-	-	-	-	-	-	-	-	-	-	-
Building Infrastructure Renovation	421,260	379,134	337,008	294,882	252,756	210,630	168,504	126,378	84,252	42,126	-
Machinery & equipment	50,231,000	45,207,900	40,184,800	35,161,700	30,138,600	25,115,500	20,092,400	15,069,300	10,046,200	5,023,100	-
Furniture & fixtures	1,212,000	1,030,200	848,400	666,600	484,800	303,000	121,200	2,297,480	1,952,858	1,608,236	1,263,614
Office vehicles	1,913,000	1,626,050	1,339,100	1,052,150	765,200	478,250	191,300	2,914,651	2,477,454	2,040,256	1,603,058
Office equipment	2,159,500	1,835,575	1,511,650	1,187,725	863,800	539,875	215,950	4,093,571	3,479,536	2,865,500	2,251,464
Security against building	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000
Total Fixed Assets	56,836,760	50,978,859	45,120,958	39,263,057	33,405,156	27,547,255	21,689,354	25,401,380	18,940,299	12,479,218	6,018,136
<i>Intangible assets</i>											
Pre-operation costs	1,169,964	935,971	701,978	467,985	233,993	-	-	-	-	-	-
Total Intangible Assets	1,169,964	935,971	701,978	467,985	233,993	-	-	-	-	-	-
TOTAL ASSETS	64,202,690	67,052,815	70,271,985	72,234,068	78,513,842	81,770,460	85,030,577	91,949,641	96,673,499	97,028,863	98,734,830
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable	-	893,654	1,019,418	1,163,760	1,329,688	1,512,597	1,693,175	1,897,852	2,130,291	2,394,784	2,021,528
Total Current Liabilities	-	893,654	1,019,418	1,163,760	1,329,688	1,512,597	1,693,175	1,897,852	2,130,291	2,394,784	2,021,528
<i>Other liabilities</i>											
<i>Shareholders' equity</i>											
Paid-up capital	64,202,690	64,202,690	64,202,690	64,202,690	64,202,690	64,202,690	64,202,690	64,202,690	64,202,690	64,202,690	64,202,690
Retained earnings	-	1,956,471	5,049,876	6,867,617	12,981,464	16,055,172	19,134,711	25,849,099	30,340,518	30,431,388	32,510,612
Total Equity	64,202,690	66,159,162	69,252,566	71,070,308	77,184,155	80,257,863	83,337,402	90,051,789	94,543,208	94,634,079	96,713,302
TOTAL CAPITAL AND LIABILITIES	64,202,690	67,052,815	70,271,985	72,234,068	78,513,842	81,770,460	85,030,577	91,949,641	96,673,499	97,028,863	98,734,830

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
Operating activities											
Net profit		3,912,942	8,143,281	8,685,358	19,095,311	19,128,880	22,214,251	32,563,486	34,831,937	30,522,259	34,589,836
Add: depreciation expense		5,857,901	5,857,901	5,857,901	5,857,901	5,857,901	5,857,901	5,593,676	6,461,081	6,461,081	6,461,081
amortization of pre-operating costs		233,993	233,993	233,993	233,993	233,993	-	-	-	-	-
Finished goods inventory		(742,905)	(94,611)	(106,141)	(119,033)	(133,447)	(118,033)	(129,689)	(142,497)	(156,570)	(172,034)
Equipment inventory	(418,592)	(86,215)	(103,972)	(125,386)	(151,211)	(182,355)	(219,914)	(265,208)	(319,832)	(385,705)	2,258,390
Raw Material Inventory	(408,333)	(121,684)	(154,888)	(196,693)	(249,254)	(239,138)	(289,708)	(350,972)	(425,190)	(515,104)	2,950,964
Packing and consumable inventory	(69,042)	(20,575)	(26,189)	(33,257)	(42,145)	(40,434)	(48,985)	(59,343)	(71,892)	(87,095)	498,957
Pre-paid building rent	(300,000)	(30,000)	(33,000)	(36,300)	(39,930)	(43,923)	(48,315)	(53,147)	(58,462)	(64,308)	707,384
Accounts payable		893,654	125,764	144,342	165,928	182,910	180,578	204,676	232,439	264,494	(373,257)
Cash provided by operations	(1,195,967)	7,662,311	13,495,276	13,955,744	24,216,487	24,153,567	27,089,244	37,026,289	39,982,358	35,460,951	46,285,026
Financing activities											
Issuance of shares	64,202,690	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	64,202,690	-	-	-	-	-	-	-	-	-	-
Investing activities											
Capital expenditure	(58,006,723)	-	-	-	-	-	-	(9,305,703)	-	-	-
Cash (used for) / provided by investing activities	(58,006,723)	-	-	-	-	-	-	(9,305,703)	-	-	-
NET CASH	5,000,000	7,662,311	13,495,276	13,955,744	24,216,487	24,153,567	27,089,244	27,720,587	39,982,358	35,460,951	46,285,026

13. KEY ASSUMPTIONS

13.1. Operating Cost Assumptions

Table 47: Operating Cost Assumptions

Description	Details
Operating costs growth rate	10.1%
Electricity growth rate	9.0%
Water price growth rate	9.0%
Gas price growth rate	9.0%
Wage growth rate	9.7%
Office equipment price growth rate	9.6%
Office vehicles price growth rate	6.2%

13.2. Revenue Assumptions

Table 48: Revenue Assumptions

Description	Details
Sale price growth rate	10.1%
Capacity utilization	70%
Capacity utilization growth rate	5%
Maximum capacity	90%

13.3. Financial Assumptions

Table 49: Financial Assumptions

Description	Details
Project life (Years)	10
Debt: Equity	0:100
Discount Rate	25%

13.4. Debt Related Assumptions

Table 50: Debt Related Assumption

Description of Cost	Details
Project Life (Years)	10
Debt: Equity	50:50
Discount Rate	22%

Debt Grace Period	1 Years
Interest Rate (KIBOR+3%)	19%

13.5.Cash Flow Assumptions

Table 51: Cash Flow Assumptions

Description	Details
Accounts receivable cycle (in days)	10
Accounts payable cycle (in days)	30

Small and Medium Enterprises Development Authority

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