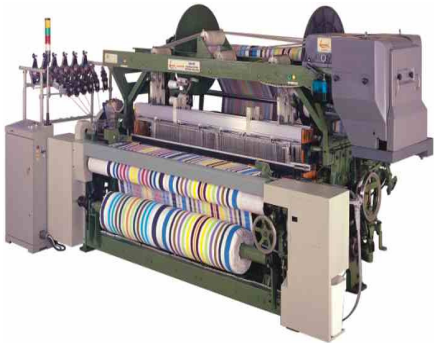


# DETAILED PROJECT REPORT ON AUTO LOOM / RAPIER LOOM (8 Nos.) (SOLAPUR TEXTILE CLUSTER)



**Bureau of Energy Efficiency**

*Prepared By*



*Reviewed By*



**AUTO LOOM/RAPIER LOOM (8 Nos.)**

**SOLAPUR TEXTILE CLUSTER**

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BEE, 2010

Detailed Project Report on Auto Loom/Rapier Loom (8 Nos.)

Textile SME Cluster, Solapur, Pune, Maharashtra (India)

New Delhi: Bureau of Energy Efficiency;

Detail Project Report No.: **SLP/TXT/AL8/14**

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We have received very encouraging feedback for the BEE SME Program in various SME Clusters. Therefore, it was decided to bring out the DPR for the benefits of SMEs. We sincerely thank the officials of BEE, Executing Agencies and ISTSL for all the support and cooperation extended for preparation of the DPR. We gracefully acknowledge the diligent efforts and commitments of all those who have contributed in preparation of the DPR.

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## ***List of Abbreviations***

kWh	kilo Watt Hour
SME	Small and Medium Enterprises
GHG	Green House Gas
BEE	Bureau of Energy Efficiency
DPR	Detailed Project Report
O&M	Operational & Maintenance
NPV	Net Present Values
ROI	Return on Investment
IRR	Internal Rate of Return
DSCR	Debt Service Coverage Ratio
PBT	Profit Before Tax
PAT	Profit After Tax
SIDBI	Small Industries Development of India

## **EXECUTIVE SUMMARY**

Zenith Energy Services Pvt. Ltd is executing BEE-SME program in Solapur textile cluster, supported by Bureau of Energy Efficiency (BEE) with an overall objective of improving the energy efficiency in cluster units.

Solapur textile cluster is one of the largest textile clusters in India; accordingly this cluster was chosen for energy efficiency improvements by implementing energy efficient measures/technologies, so as to facilitate maximum replication in other textile clusters in India.

The main energy forms used in the cluster units are electricity and fuel such as wood and other biomass product. Electricity is mostly used in power looms, winding machines, doubling machines, warping machines, hang dyeing machine, blowers, hydro extractor, small pumps and lighting.

Retrofitting of power looms with rapier/auto looms will reduces the power consumption & production cost and also increases the rate of production.

Project implementation i.e. installation of eight rapier/auto loom in place of thirty two power loom will lead to reduction in electricity consumption by 37440 kWh per annum however; this intervention will not have any effect on the existing consumption pattern of fuel.

Total investment, debt equity ratio for financing the project, monetary savings, Internal rate of return (IRR), Net present value (NPV),Debt service coverage ratio (DSCR), Return on investment (ROI) etc. for implementing energy efficient economizer is furnished in Table below:

<b>S.No</b>	<b>Particular</b>	<b>Unit</b>	<b>Value</b>
1	Project cost	₹(in lakh)	49.81
2	Electricity saving	kWh / year	4680
3	Monetary benefit	₹(in lakh)	25.66
4	Debit equity ratio	ratio	3:1
5	Simple payback period	years	1.94
6	NPV	₹(in lakh)	29.73
7	IRR	%age	30.56
8	ROI	%age	30.70
9	DSCR	ratio	2.18
10	Process down time	day	10

The projected profitability and cash flow statements indicate that the project implementation will be financially viable and technically feasible

## **ABOUT BEE'S SME PROGRAM**

Bureau of Energy Efficiency (BEE) is implementing a BEE-SME Programme to improve the energy performance in 25 selected SMEs clusters. Solapur Textile Cluster is one of them. The BEE's SME Programme intends to enhance the energy efficiency awareness by funding / subsidizing need based studies in SME clusters and giving energy conservation recommendations. For addressing the specific problems of these SMEs and enhancing energy efficiency in the clusters, BEE will be focusing on energy efficiency, energy conservation and technology up-gradation through studies and pilot projects in these SMEs clusters.

### ***Major activities in the BEE -SME program are furnished below:***

Energy use and technology audit

The energy use technology studies would provide information on technology status, best operating practices, gaps in skills and knowledge on energy conservation opportunities, energy saving potential and new energy efficient technologies, etc for each of the sub sector in SMEs.

### ***Capacity building of stake holders in cluster on energy efficiency***

In most of the cases SME entrepreneurs are dependent on the locally available technologies, service providers for various reasons. To address this issue BEE has also undertaken capacity building of local service providers and entrepreneurs/ Managers of SMEs on energy efficiency improvement in their units as well as clusters. The local service providers will be trained in order to be able to provide the local services in setting up energy efficiency projects in the clusters

### ***Implementation of energy efficiency measures***

To implement the technology up-gradation projects in clusters, BEE have proposed to prepare the technology based detailed project reports (DPRs) for a minimum of five technologies in three capacities for each technology.

### ***Facilitation of innovative financing mechanisms for implementation of energy efficiency projects***

The objective of this activity is to facilitate the uptake of energy efficiency measures through innovative financing mechanisms without creating market distortion

## 1 INTRODUCTION

### 1.1 About the solapur textile cluster

The products manufactured in Solapur Textile Cluster are cotton terry towels and bed sheets. The towels and bed sheets are renowned in the country and have good market in India. The main raw material for the units is cotton yarn, which is procured from local spinning mills and agents. The cost of energy (electrical and thermal energy) as percentage of manufacturing cost varies between 8 and 10%.

Majority of the cluster units are of integrated type, where the raw material yarn is processed in-house to the final product. The energy cost is second to the raw materials cost. Majority of the units in the cluster are dependent on local/ run of the mill technologies of low end and with little investment initiatives and technology up-gradation.

The main energy forms used in the cluster units are grid electricity, wood, and small quantity of coal. The electricity is used for power looms, doubling machines, winding machines, hydro extractors, warping machines and lighting. Wood is used as fuel for boilers, thermic fluid heaters, and chulhas for hot water generation. The details of annual energy consumption of a typical unit having a production capacity of 1, 20,000 kg of final product of the cluster are furnished in the Table 1.1 below:

**Table 1.1 Details of annual energy consumption of a typical unit**

S.No.	Parameter	Unit	Value
1	Electricity consumption	kWh/annum	1,97,784
2	Wood consumption	tonne/annum	144
3	Production	kg/annum	1,20,000

### ***Production process***

The main operational process for production of towels and bed sheets in cluster units are:

#### ***Doubling***

In the Doubling process, thin single yarn is converted to double yarn for strengthening the yarn by using doubling machine.

#### ***Yarn dyeing***

Initially, the yarn is soaked in soap water for 24 hours to remove the dirt and other foreign materials and after soaking, the yarn is taken for bleaching. Bleaching is carried out by

soaking the yarn in tanks mixed with bleaching agents and after completion of the process; the yarn is washed with normal water.

The hang dyeing machine tanks are filled with required quantity of normal water and required chemicals and dyeing agents are added. The temperature of the water is raised by oil circulation or direct steam injection. Fire wood is used as fuel. The required colors are added to the yarn and the dyeing process takes about 90 to 120 minutes per batch. After dyeing, the yarn is washed with normal water, and the yarn is taken for soaping for colour fixation in hot water for about 20 minutes in hang dyeing machines. The water is drained to the waste drainage lines. The wet yarn is taken to hydro extractors for removing the water in the yarn and taken for drying in the natural sunlight.

### ***Winding***

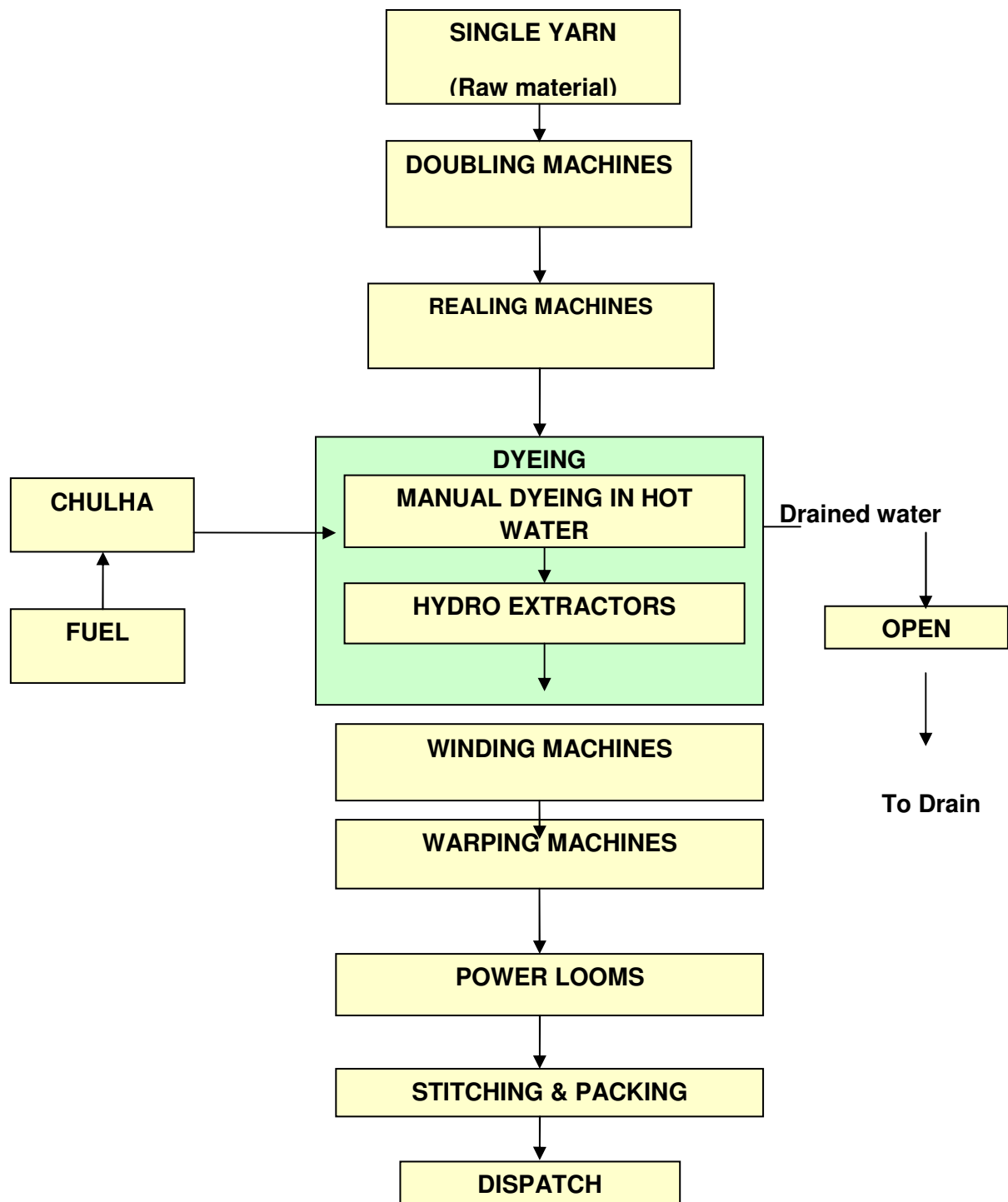
The yarn after drying is taken for winding in which the yarn is wound to bobbins and cones. The winded yarn is taken for further process.

### ***Warping***

In warping, the winded yarn is wound to beams according to designed pattern (customized designs). Then the beams are taken for Weaving.

### ***Weaving***

The beams, which are wound with yarn are taken and placed in power looms where the designed pattern is already set. In power looms, the yarn is converted to final product (Towel or bed sheets) by weaving. The product obtained from weaving is taken for stitching and packing. The general process flow diagram of a typical unit for production of towels and bed sheets is furnished in Figure 1.1.



**Figure 1.1 Process flow chart of typical textile unit**

The production process as depicted above is similar for all textile units in Solapur textile cluster. However, depending on type of product and product quality, the above stated process flow varies as per the requirement of the industry.

## 1.2 Energy performance in cluster

Majority of the industries located in Solapur are engaged in manufacturing of towels and bed sheets. The main energy sources for Solapur cluster units are electricity and fuels such as Wood & briquettes. The wood and GN husk briquettes are used as fuel for boilers, thermic fluid heaters and chulhas for hot water generation and electricity is used for operation of prime movers of doubling machine motors, ID & FD fans, pumps, hank dyeing machine drives, power loom drives, winding machine motors, etc. Majority of the units in the Solapur textile cluster are using wood for thermal energy generation due to easy availability and economical point of view.

Energy cost is around 8 to 10 percent of manufacturing cost in typical manufacturing unit, out of which the cost of electrical energy works out to 58 percent of the total energy cost and remaining accounts for thermal energy.

In a typical textile manufacturing unit annual consumption of electrical energy and wood is 1,97,784 kWh and 144 tonnes respectively for average production capacity of 1,20,000 kg of final product.

### 1.2.1 Specific energy consumption of final product

Specific electrical and thermal energy consumption in textile unit depends upon the final product manufactured in that unit. The electrical and thermal energy consumption of typical textile unit is 1.65 kWh per kg of final product and 1.20 kg of wood per kg of final product respectively (includes all colours dyeing in cold water, medium temperature water and high temperature water)

## 1.3 Proposed equipment to be upgrade

### 1.3.1 Description of existing equipment

During energy audit studies in various textile industries in Solapur textile cluster, it was observed that about 1200 power loom in Solapur Textile cluster. All power looms are of shuttle type and are too old. These power looms are used for weaving terry towels and bed sheets.

In the present conventional shuttle looms, it is necessary to pass a shuttle weighing around half a kilogram through the warp shed to insert a length of weft yarn which weighs only few grams. The shuttle has to be accelerated rapidly at the starting of picking cycle and also to be decelerated, stopped abruptly at the opposite end. This process creates heavy noise and shock and consumes considerable energy. Beat-up is done by slay motion which again weighs a few hundred kilograms. The wear life of the picker and checking mechanism is also limited due to heavy shock. Due to the above reasons smooth sequence of weaving is disturbed which affects the maximum running speed and hence machine production. In multi

colour weft insertion, Drop box motion is attached which is also further limits the speed of the machine. The small weft package in the shuttle requires frequent replenishments and for each loom stoppage there is a possibility of one defect. The probability of weft way fabric defects are high to the tune of 70% in shuttle looms. Even in automatic shuttle looms there is a chance of transfer failures and weft lashing in defects.

### 1.3.2 Role in process

The power looms are one of the most important equipment in producing of cotton terry towels and bed sheets. The power looms are used for weaving the dyed yarn to towels and bed sheets.

### 1.4 Baseline for existing equipment

Energy consumption for Power loom would depend on following:

- Load on Power loom
- Operational & maintenance practices

#### 1.4.1 Design and operating parameter

Present electricity consumption in power loom machine is 33.6 kWh and connected with 1.0 HP motor. The average production is 48 kg per day per machine. The power loom machines are operated in two shifts in a day.

#### 1.4.2 Production cost per kg of final product

Production cost for various power loom machine of three typical units in the cluster are separately furnished in Table 1.2 below:

**Table 1.2 production cost by power loom machine**

S.No.	Name of unit	Production Cost (Including wages, O&M, power cost etc)(Rs./day)	Production cost for 4 looms (₹/day)	Production per day (kg/loom)	Production cost ₹/kg
1	Rajashree Industries	190	760	12.5	15.2
2	Balla Textile Mills Pvt Ltd	182	728	11.9	15.3
3	Devsani Textiles	187	748	14.5	12.9



## **1.5 Barriers for adoption of proposed equipment**

The technology and innovations in SMEs are generally different from that of large firms. Technology in the SME sector has an increasingly complex or combinative character, most of the SMEs units in Solapur cluster are labour intensive and utilize local resources. The SME entrepreneurs are generally not willing to invest in state-of-art technology. Major barriers in the up-gradation of technology in the cluster are non availability of technology; distrust on technology supplier, lack of awareness about energy efficiency among small and medium enterprises, prevents them from adoption of energy efficient technologies.

### **1.5.1 Technological Barriers**

The major technical barriers that prevented the implementation of Rapier loom are

- Lack of awareness and information about the rapier loom and its benefit
- Absence of local Rapier loom supplier
- Dependence on local equipment suppliers, whom doesn't have technical knowledge about rapier loom and its proper installation

### **1.5.2 Financial Barrier**

Implementation of the proposed project activity requires investment of ₹ 49.81 lakh per unit. Such investment is not commonly seen in the cluster units for energy efficiency improvement. Further, from the business perspective of SMEs, it is more viable, assured, and convenient to invest on project expansion for improving the production capacity or quality, rather than make piecemeal investment in retrofit and replace options for energy savings. In view of this and given the limited financial strength of the textile mills, it is evident that the owners would not like to take the risk and invest in energy efficiency measures.

However, the financial attractiveness of the project activity may motivate the owners to move forward in taking up initiatives in energy conservation and efficiency.

### **1.5.3 Skilled manpower**

The non-availability of skilled manpower having awareness about energy efficiency and related issues in the cluster is one of the major barriers. Lack of skilled manpower for operation and maintenance of the rapier looms is also one of the major barriers that prevented the implementation.

### **1.5.4 Other barrier (If any)**

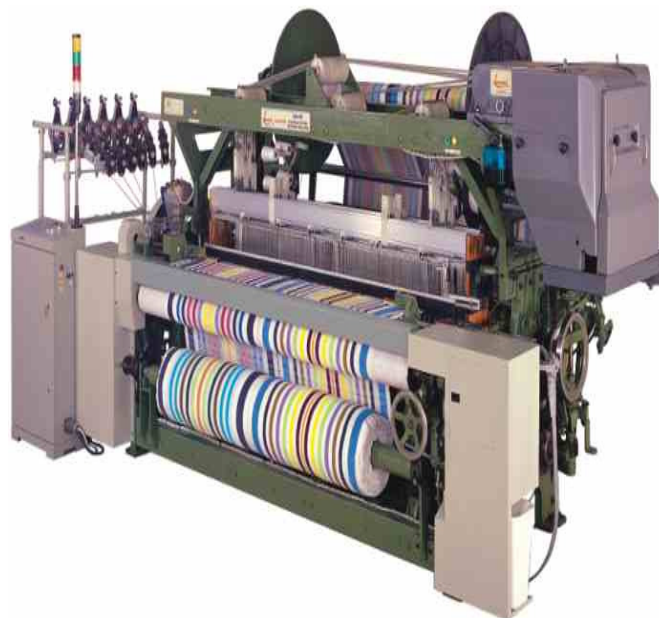
The recent recession in European and other Asian countries and reduction in market trend for the products in national and international markets was also one of the major barriers for the proposed technology.

## 2 PROPOSED ENERGY EFFICIENT EQUIPMENT

### 2.1 Detail description of technology

#### 2.1.1 Description of equipment

The rapier looms offer unparalleled versatility when it comes to yarns. From the finest counts of cotton to the thickest Industrial yarns and can handle anything thrown at its negative rapier head. The soft-pick gear system enables smooth transition of even highly fancy yarns like embroidery and slub. The rapier loom is upgrade from shuttle-looms to the world of modern weaving system and shuttle-less weaving. Rapier looms has been designed to replace the old shuttle looms without any major changes to the existing infrastructure. The Immediate benefits of selecting rapier looms are



**Figure 2.1 Rapier loom**

- No need for new buildings or any new infrastructure.
- Could fit in place of your current shuttle-looms.
- Configured specially keeping in mind the skills of power-loom operators.
- No special training required for loom operators.
- Immediate reduction of man-power and laborers.
- 20% subsidy under TUFS on our certified looms in addition to State Government Incentives.
- Step-by-Step consultancy by our engineers to help you upgrade, install & adapt to new machines.

### ***Speed***

The normal speed of the conventional power looms is around 120 RPM, where as in rapier looms, the speeds upto 220 RPM (actual) can be attained and coupled with high efficiencies of upto 95%, this machine gives upto 3 times more productivity than the conventional power looms.

### ***Color Weft Insertion***

Rapier looms offers up to 8 Color Pick-at-Will weft insertions, so that weave the fanciest of fabrics can be attained. The pick-at-will system is computerised and microprocessor controlled, hence letting the programme sequences of more than 1, 00,000 picks. Such technological edge will definitely give you an edge in the market.

### ***Start-Mark Prevention System***

Rapier looms realises the most delicate need of rapier users to prevent start-marks in weaving. The custom designed 'HT-Drive' motor of the machine supplies more than 150% torque for the first-pick to successfully prevent the start marks.

### ***Lower per meter Costs***

Considering 3 times more productivity with same space and even lesser amount of man power along with lower power consumption, it is quite obvious that rapier looms can offer lower production costs compared to conventional power-looms or even rapier-shuttle change machines. Moreover continuous weft-insertion eliminates the need for investing in pirn-winding machines or even extra operators.

### ***Lower Maintenance***

Due to lower vibrations, there's less wear-n-tear of rotating components and bearings resulting in lower maintenance costs. Also, centralised lubrication offered on the looms gives single-point lubrication for the complete machine, thus further reducing the headaches of maintenance

### ***Shedding***

The rapier loom has the flexibility and can easily add and attach any of the shedding motions available in the market including:

- Dobby
- Jacquard
- Cam Shedding
- Positive Cam: for Heavy plain fabrics (bolting cloth, tirecord cloth etc.)
- Negative Cam: for light sensitive fabrics

**Take-Up**

Universal 7-wheel Wretchet-n-Pawl semi-positive take-up is the most widely used and well established Take-Up system offered in rapiers around the world. The well designed take-up is capable of handling a weft-density of 4-120 picks per Inch.

**Let-Off**

The capability of rapier looms to weave any and all kinds of fabrics has been created due to 3 different let-off options available with the machine depending on your fabric.

**Ruti-Type**

For weavers of regular cotton-fabrics who've been used to highly versatile Ruti-Type let-off.

**Microprocessor Controller**

The heart of the complete control system, this microprocessor is one of the most powerful control systems offered today for crank-type rapier looms. The system can be programmed to output any kinds of pick programs. The standard functions include:

- Constant monitoring of weft and warp yarn for breakages Cloth Length Counter
- Pick-programming
- Weft-Controller

**Exclusive Feature**

For all power loom users, investing in Rapier looms normally require them to erect a completely new building infrastructure. But, with AWT-250EX, we're proud to say that we are the only rapier-loom manufacturer in the world whose machines can fit in the regular '16-feet sheds', thus eliminating the need for any additional investment and hence brings down the up-gradation costs considerably. In Solapur Textile Cluster units, majority of the units has power looms, Considering the above facts and benefits of the rapier loom and for reducing the overall production cost, it is suggested to replace power looms with rapier looms. The details of production cost per kg in power looms is provided in Annexure 1

**2.1.2 Availability of equipment**

The Rapier loom suppliers are available in Pune, which is 200 km from Solapur city and M/s Laxmi Shuttleless loom is also planning to appoint a dealer at Solapur.

**2.1.3 Service/equipment providers**

The service providers are available in Pune. Details of service providers are given in Annexure 6.

### 2.1.4 Technology/equipment specification

Benefits of rapier loom over power loom machine are shown in Table 2.1 below.

**Table 2.1 Benefits of Rapier loom over conventional power loom**

<i>Conventional Power-Loom</i>	<i>Rapier loom</i>
55-65% Efficiency	85-95% Efficiency
Max. 110 RPM (eff. 70 RPM due to lower efficiency)	Max. 220 RPM (eff. 200 RPM due to Higher Efficiency)
Lower Output per shift	Upto 2.5 times more output per shift
Lower Output per operator	Upto 2.5 times more output per operator
High Labor requirement	Low labor requirement
'Kandi / Shuttle / Pirn-Winder' machine & operator required	Shuttle less (No Kandi, No Pirn, No Pirn Machine Operator)
High Maintenance because of extremely high vibration	Extremely Low vibration, hence lower maintenance
Higher & Faster Wear-n-Tear of components	Lower vibration leads to better & longer life
Light-Weight leading to shorter life and higher vibrations	Heavy-Duty Structure to reduce vibration thus leading to longer life
Lower Output per unit area of floor space	3 times more output per unit area of floor space
High Production Cost Due to lower labor productivity and lower efficiencies and higher costs per meter of fabric.	Lower Production Cost Due to lower labor and lower area and lower power requirement per meter of fabric.

### 2.1.5 Justification of technology selected and suitability

As discussed above, the production cost per kg of final product i.e., towels or bed sheets is high due to low production per loom, more breakdowns, more power consumption, more manpower cost and also the quality is poor compared with the product produced in rapier looms.

### 2.1.6 Superiority over existing system

The benefits of the rapier looms over conventional power looms are furnished in Table 2.1 below:

- High productivity due to high speed and wider width of looms.
- Reduced labour cost due to higher allocation of looms and productivity.

- Defect free cloth for longer length.
- Better environment due to low noise level.
- Pirn winding process is eliminated
- Less value loss of fabrics.
- Low consumption of stores and spares.
- Less space requirement per meter of cloth.
- More colours in weft direction (upto 12) by Pick and Pick method.
- Wider width fabrics and multi width fabrics can be woven,
- High degree of flexibility to suit a wide range of fibers and counts
- Easily adaptable for market trends
- Bigger flanges can accommodate 3 times more yarn
- Due to less beam changes lower down-time and lesser wastages
- Less dependency on labour skills
- Higher design capabilities due to microprocessor and electronic controls
- Easy maintenance and less work load for Jobbers

### **2.1.7 Terms and conditions in sales & service of Rapier loom**

#### ***Terms of payment***

50% advance with purchase order, and remaining 50% along with taxes and duties against Performa invoice before dispatch.

#### ***Excise duty, sales tax & other levies***

The quoted prices are exclusive of all taxes, duties, levies such as excise duty, central/local sales tax, octroi, etc. as are applicable at the time of dispatch or imposed by any statutory authorities subsequently or paid by us, shall be paid by you extra at actual. However CVD is charged at 8% plus 4% on the unit price plus 3% education cess and VAT is charged at 5%.

#### ***Warranty***

The supplier shall repair or replace at free of cost, on ex – works basis the whole or any portion of material which under normal and proper use and maintenance proves defective in material and/or workmanship within 12 months from the date of commissioning or 18 months from the date of shipment of equipment whichever is earlier, provided prompt notice is given of such defects.

### 2.1.8 Process down time during Implementation

The process down time is envisaged as installation of Rapier loom will take 10 days for installation.

### 2.2 Life cycle assesment and risk analysis

Life cycle of Rapier loom is considered as 15 years.

### 2.3 Suitable unit for implementation of proposed technology

Four conventional power looms can be replaced with a single rapier loom. The suitable unit has some specification of power loom which is furnished in Table 2.2 below:

**Table 2.2 specification of power loom for suitable machine**

<i>Parameter</i>	<i>Details</i>	<i>Parameter</i>	<i>Details</i>
Driving System	By Push Button Control On Both Side of Loom	Weft Selection	Electronic
Running Speed	160-180 RPM	Weft Feed	By Weft Feeder
Reed Space	200, 230, 250, 260, 280 cm	Driving Motor	1.5 kW, 960 RPM
Weft Insertion	Both Side Flexible Rapier System	Applicable Yarn	Cotton, All Man Made Yarns
Weft Colours	* Up to 6 Colors	Terry Loop	By Movable Reed Operated By Solenoid.
Weft Detection	By Piezo Electronic Slide Sensor	Terry Loop Height	0-10 mm
Shedding Motion	* Electronic Dobby / Jacquard	Cramming Motion	Electronic
Cloth Roll dia.	400 mm	Control Panel	LCD System With Keypad For
Selvage	Independent Positive Leno - Flase Selvage Motion	Beam Flange Dia.	Ground Beam: 600 mm Top Beam: 750 mm
Warp Yarn zetection	2 Row Electrical Type For Top Beam & Ground Beam.	Lubrication	Centralised Lubrication System
Braking System	By Electromagnetic Brake	Letting Off Motion	Electronically Operated for Ground / Pile Beam.

### 3 ECONOMIC BENEFITS OF PROPOSED EQUIPMENT

#### 3.1 Technical benefits

##### 3.1.1 Fuel saving

No fuel saving is possible by the implementation of the project activity.

##### 3.1.2 Electricity saving

Total electricity saving would be about 37440 kWh per year by the installation of proposed equipment.

##### 3.1.3 Improvement in product quality

Proposed equipment has significant impact in improving the quality of the product.

##### 3.1.4 Increase in production

The proposed equipment increased in production is almost 2.5 to 3 times per loom.

##### 3.1.5 Reduction in raw material consumption

Raw material consumption is reduced due to reduction in breakages of the yarn in shuttle power loom.

#### 3.2 Monetary benefits

The monetary savings due to installation of one rapier looms is ₹ 3, 20,700 per year and for 8 rapier looms, the monetary benefit works out at ₹ 25,65,600. The monetary savings are due to result of power savings, less manpower cost, improved quality, low maintenance, more output/machine etc. Detail monetary benefit is given in Table 3.1 below:

**Table 3.1 Energy and cost benefit of Rapier loom**

S.No.	Parameter	Unit	Value
1	Present electricity consumption in power loom	kWh/annum	33.6
2	Operational hours	hours/day	12
3	Operational days per annum	days/annum	300
4	Electricity consumption after installation of Rapier loom	kWh/annum	18.0
5	Cost of electricity	₹/kWh	2.50
6	Electricity Cost savings after implementation	₹ in lakh	11,700
7	Total monetary benefit per auto loom	₹ in lakh	3,20,700
8	Total monetary benefit	₹ in lakh	25,65,600



### **3.3 Social benefits**

#### **3.3.1 Improvement in working environment**

As installation of Rapier loom eliminates Mechanical shock, Vibration and sound etc., this may less the breakdowns and working environment may improved.

#### **3.3.2 Improvement in skill set of workers**

The technology selected for the implementation is new and energy efficient. The technology implemented will create awareness among the workforce about energy saving.

#### **3.3.3 Impact on wages/emoluments**

No impact on wages or emolument of workers.

### **3.4 Environmental benefit**

#### **3.4.1 Reduction in effluent generation**

The effluent generation due to implementation of the project activity is insignificant.

#### **3.4.2 Reduction in GHG emission such as CO<sub>2</sub>, NO<sub>x</sub>, etc**

The major GHG emission reduction source is CO<sub>2</sub> and this equipment will reduce electricity consumption. The total emission reductions are estimated as 32 tonne of CO<sub>2</sub> per annum due to implementation of the project activity.

#### **3.4.3 Reduction in other emissions like Sox**

No significant impact on SO<sub>x</sub> emissions.

## 4 INSTALLATION OF PROPOSED EQUIPMENT

### 4.1 Cost of equipment implementation

#### 4.1.1 Cost of equipment

The total cost for installation of 8 nos Rapier loom is estimated at ₹ 47.09 lakh, which includes, Panel, switches, cabling etc.

#### 4.1.2 Other costs

The total cost of implementation of the proposed rapier loom is estimated at ₹ 49.81 lakh. The above cost includes cost of equipment/machinery, cost of fabrication (and/or) commissioning charges and the details are furnished in Table 4.1 below:

**Table 4.1 Details of Project cost**

S.No	Particular	Cost ( ₹ in lakh)
1	Equipment and machinery	47.06
2	Civil Work	1.50
3	Interest during implementation	1.21
4	Total Cost	49.81

### 4.2 Arrangement of funds

#### 4.2.1 Entrepreneur's contribution

The total cost of the proposed technology is estimated at ₹ 49.81 lakh. The entrepreneur's contribution is 25% of total project cost, which is ₹ 12.45 lakh.

#### 4.2.2 Loan amount

The term loan is 75% of the total project, which is ₹ 37.35 lakh. As the overall energy efficiency in the project is more than 15% it qualifies for subsidy of 25% of the project cost as per the NMCP scheme of Ministry of MSME, GoI. 25 % of the project cost in this case works out to ₹ 12.45 lakh. As the subsidy is normally available after implementation of the project the same has not been taken in the project cost and means of finance. On receipt of subsidy from Ministry of MSME, GoI through the nodal agency the amount of subsidy is generally set off [reduced] from the loan outstanding by the lending bank. Availability of this subsidy will make the project economically more attractive

#### 4.2.3 Terms & conditions of loan

The interest rate is considered at 10.00% which is SIDBI'S Lending rate for energy efficiency projects. The loan tenure is assumed 5 years and the moratorium period is 6 months.

### 4.3 Financial indicators

#### 4.3.1 Cash flow analysis

Considering the above mentioned assumptions, the net cash accruals starting with ₹ 17.30 lakh in the first year operation and gradually increases to ₹ 57.84 lakh at the end of sixth year.

#### 4.3.2 Simple payback period

The total project cost of the proposed equipment is ₹ 49.81 lakh and monetary savings due to reduction in electricity consumption is ₹ 25.66 lakh and the simple payback period works out to be 1.9 years (23 months).

#### 4.3.3 Net Present Value (NPV)

The Net present value of the investment at 10.00% works out to be ₹ 29.73 lakh.

#### 4.3.4 Internal rate of return (IRR)

The after tax Internal Rate of Return of the project works out to be 30.56% thus the project is financially viable.

#### 4.3.5 Return on investment (ROI)

The average return on investment of the project activity works out at 30.70% for an investment of ₹ 49.81 lakh.

**Table 4.2 Financial indicator of project**

S. No	Particulars	Unit	Value
1	Simple Pay Back period	months	23
2	IRR	%age	30.56
3	NPV	lakh	29.73
4	ROI	%age	30.70
5	DSCR	ratio	2.18

### 4.4 Sensitivity analysis

A sensitivity analysis has been carried out to ascertain how the project financials would behave in different situations like there is an increase in electricity savings or decrease in electricity savings. For the purpose of sensitive analysis, two scenarios are considered are.

- Increase in electricity savings by 5%
- Decrease in electricity savings by 5%

In each scenario, other inputs are assumed as constant. The financial indicators in each of the above situation are indicated along with standard indicators.

Details of sensitivity analysis for different scenario are furnished in Table 4.3 below:

**Table 4.3 Sensitivity analysis in different scenario**

<i>Particulars</i>	<i>DSCR</i>	<i>IRR</i>	<i>ROI</i>	<i>NPV</i>
Normal	2.18	30.56%	30.70%	29.73
5% increase in electricity savings	2.29	33.21%	31.07%	33.81
5% decrease in electricity savings	2.07	27.89%	30.28%	25.64

As could be seen from the above table, though the project is highly sensitive to electricity savings, DSCR works out to be 2.29 times in worst scenario, which indicates the strength of the project.

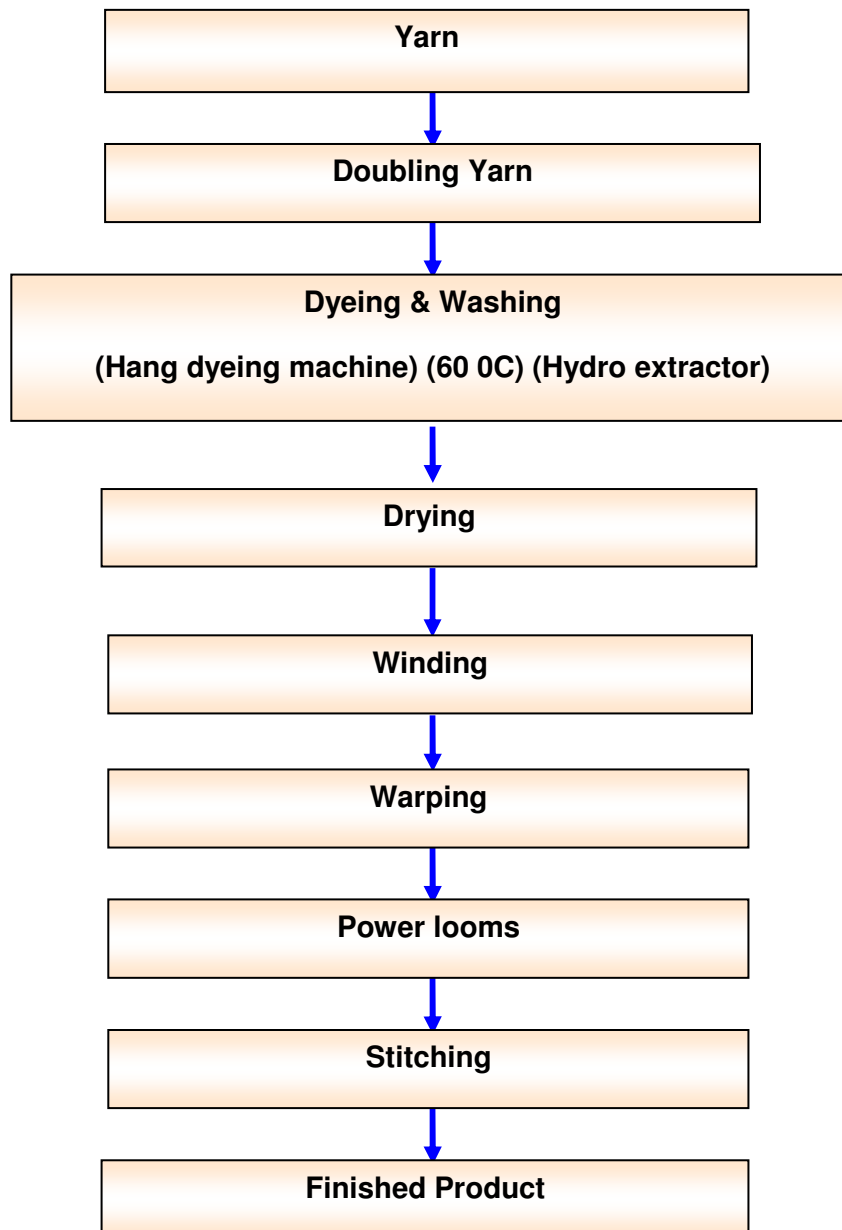
#### **4.5 Procurement and Implementation schedule**

The project is expected to be completed in 8-10 weeks from the date of financial closure. The detailed schedule of project implementation is furnished in Annexure 5.

**Annexure 1 Establishment of baseline**

S. No	Parameter	Conventional Power looms	Auto looms	Monetary Benefit (₹)
1	No. of Looms	4	1	0
2	Power consumption of each loom (kWh/day)	8.4	18.0	0.0
3	Total power consumption (kWh/day)	33.6	18.0	15.6
4	Monetary benefit due to power savings per annum	-	-	11700.0
5	Average production per loom (12 hours/day) [kg]	12	50	-
6	Total production per day (kg)	48	50	-
7	Manpower	4	1	3
8	Manpower cost (₹)	5000	7000	0
9	Total manpower cost (₹)	20000	7000	13000
10	Reduction in labour cost per annum	-	-	156000
11	Market price for the product per kg	96	105	9
12	Monetary benefit due to quality improvement	-	-	135000
13	Maintenance Cost per loom/annum	6000	6000	0
14	Total Maintenance Cost for looms (₹)	24000	6000	18000
15	Total Monetary benefit per auto loom (₹/annum)	-	-	320700

**Annexure 2 Process flow diagram**



**Annexure 3 Technology assessment report**

In the conventional shuttle looms, it is necessary to pass a shuttle weighing around half a kilogram through the warp shed to insert a length of weft yarn which weighs only few grams. The shuttle has to be accelerated rapidly at the starting of picking cycle and also to be decelerated, stopped abruptly at the opposite end. This process creates heavy noise and shock and consumes considerable energy. Beat-up is done by slay motion which again weighs a few hundred kilograms. The wear life of the picker and checking mechanism is also limited due to heavy shock. Due to the above reasons smooth sequence of weaving is disturbed which affects the maximum running speed and hence machine production. In multi colour weft insertion, Drop box motion is attached which is also further limits the speed of the machine. The small weft package in the shuttle requires frequent replenishments and for each loom stoppage there is a possibility of one defect. The probability of weft way fabric defects are high to the tune of 70% in shuttle looms. Even in automatic shuttle looms there is chance of transfer failures and weft lashing in defects.

**Annexure 4 Detailed financial analysis of Rapier loom (8 nos)****Assumptions**

<b>Name of the Technology</b>	<b>Auto Looms (8 Nos.)</b>		
<b>Rated Capacity</b>	<b>NA</b>		
<b>Details</b>	<b>Unit</b>	<b>Value</b>	<b>Basis</b>
Installed Capacity	kcal	8	
No of working days	Days	300	
No of Shifts per day	Shifts	1	(Assumed)
Capacity Utilization Factor	%		
<b>Proposed Investment</b>			
Plant & Machinery	₹ (in lakh)	45.28	
Erection & Commissioning	₹ (in lakh)	1.81	
Investment without IDC	₹ (in lakh)	1.50	
Interest During Implementation	₹ (in lakh)	48.59	
Other charges(Contingency)	₹ (in lakh)	1.21	
Total Investment	₹ (in lakh)	49.81	
<b>Financing pattern</b>			
Own Funds (Equity)	₹ (in lakh)	12.45	Feasibility Study
Loan Funds (Term Loan)	₹ (in lakh)	37.35	Feasibility Study
Loan Tenure	years	5	Assumed
Moratorium Period	Months	6	Assumed
Repayment Period	Months	66	Assumed
Interest Rate	%	10.00%	SIDBI Lending rate
<b>Estimation of Costs</b>			
O & M Costs	% on Plant & Equip	4.00	Feasibility Study
Annual Escalation	%	5.00	Feasibility Study
<b>Estimation of Revenue</b>			
Monetary Savings per loom	₹/Loom	320700	
No. of looms		8	
St. line Depn.	%age	5.28	Indian Companies Act
IT Depreciation	%age	80.00	Income Tax Rules
Income Tax	%age	33.99	Income Tax

**Estimation of Interest on Term Loan****(₹ in lakh)**

<b>Years</b>	<b>Opening Balance</b>	<b>Repayment</b>	<b>Closing Balance</b>	<b>Interest</b>
1	37.35	3.00	34.35	3.37
2	34.35	6.60	27.75	3.13
3	27.75	7.20	20.55	2.48
4	20.55	7.80	12.75	1.73
5	12.75	8.40	4.35	0.91
6	4.35	4.35	0.00	0.13
		37.35		

**WDV Depreciation**

<b>Particulars / years</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>Plant and Machinery</b>						
Cost	49.81	9.96	1.99	0.40	0.08	0.02
Depreciation	39.84	7.97	1.59	0.32	0.06	0.02
WDV	9.96	1.99	0.40	0.08	0.02	0.00



**Projected Profitability**

Particulars / Years	1	2	3	4	5	6
<b>Revenue through Savings</b>						
Fuel savings	25.66	25.66	25.66	25.66	25.66	25.66
Total Revenue (A)	25.66	25.66	25.66	25.66	25.66	25.66
<b>Expenses</b>						
O & M Expenses	1.99	2.09	2.20	2.31	2.42	2.54
Total Expenses (B)	1.99	2.09	2.20	2.31	2.42	2.54
PBDIT (A)-(B)	23.66	23.56	23.46	23.35	23.23	23.11
Interest	3.37	3.13	2.48	1.73	0.91	0.13
PBDT	20.30	20.43	20.97	21.62	22.33	22.98
Depreciation	2.63	2.63	2.63	2.63	2.63	2.63
PBT	17.67	17.80	18.34	18.99	19.70	20.35
Income tax	-	4.24	6.59	7.24	7.57	7.81
Profit after tax (PAT)	17.67	13.56	11.76	11.75	12.13	12.54

**Computation of Tax**

₹(in lakh)

Particulars / Years	1	2	3	4	5	6
Profit before tax	17.67	17.80	18.34	18.99	19.70	20.35
Add: Book depreciation	2.63	2.63	2.63	2.63	2.63	2.63
Less: WDV depreciation	39.84	7.97	1.59	0.32	0.06	0.01
Taxable profit	(19.55)	12.46	19.38	21.30	22.26	22.97
Income Tax	-	4.24	6.59	7.24	7.57	7.81

**Projected Balance Sheet**

₹(in lakh)

Particulars / Years	1	2	3	4	5	6
<b>Liabilities</b>						
Share Capital (D)	12.45	12.45	12.45	12.45	12.45	12.45
Reserves & Surplus (E)	17.67	31.23	42.99	54.74	66.87	79.41
Term Loans (F)	34.35	27.75	20.55	12.75	4.35	0.00
Total Liabilities D)+(E)+(F)	64.47	71.44	76.00	79.94	83.67	91.87
<b>Assets</b>						
Gross Fixed Assets	49.81	49.81	49.81	49.81	49.81	49.81
Less: Accm. Depreciation	2.63	5.26	7.89	10.52	13.15	15.78
Net Fixed Assets	47.18	44.55	41.92	39.29	36.66	34.03
Cash & Bank Balance	17.30	26.89	34.08	40.66	47.02	57.84
TOTAL ASSETS	64.47	71.44	76.00	79.94	83.67	91.87
Net Worth	30.12	43.68	55.44	67.19	79.32	91.86
Debt equity ratio	2.76	2.23	1.65	1.02	0.35	0.00

**Projected Cash Flow:**

₹ (in lakh)

Particulars / Years	0	1	2	3	4	5	6
<b>Sources</b>							
Share Capital	12.45	-	-	-	-	-	-
Term Loan	37.35						
Profit After tax		17.67	13.56	11.76	11.75	12.13	12.54
Depreciation		2.63	2.63	2.63	2.63	2.63	2.63
Total Sources	49.81	20.30	16.19	14.39	14.38	14.76	15.17
<b>Application</b>							
Capital Expenditure	49.81						
Repayment of Loan	-	3.00	6.60	7.20	7.80	8.40	4.35
Total Application	49.81	3.00	6.60	7.20	7.80	8.40	4.35
Net Surplus	-	17.30	9.59	7.19	6.58	6.36	10.82
Add: Opening Balance	-	-	17.30	26.89	34.08	40.66	47.02
Closing Balance	-	17.30	26.89	34.08	40.66	47.02	57.84

**Calculation of Internal Rate of Return**

₹ (in lakh)

Particulars / months	0	1	2	3	4	5	6
Profit after Tax		17.67	13.56	11.76	11.75	12.13	12.54
Depreciation		2.63	2.63	2.63	2.63	2.63	2.63
Interest on Term Loan		3.37	3.13	2.48	1.73	0.91	0.13
Salvage/Realizable value						-	-
Cash outflow	(49.81)	-	-	-	-	-	-
Net Cash flow	(49.81)	23.66	19.33	16.87	16.11	15.67	5.31
IRR	30.56%						

NPV	29.73
-----	-------

**Break Even Point**

₹ (in lakh)

Particulars / Years	1	2	3	4	5	6
<b>Variable Expenses</b>						
Oper. & Maintenance Exp (75%)	1.49	1.57	1.65	1.73	1.82	1.91
Sub Total (G)	1.49	1.57	1.65	1.73	1.82	1.91
<b>Fixed Expenses</b>						
Oper. & Maintenance Exp (25%)	0.50	0.52	0.55	0.58	0.61	0.64
Interest on Term Loan	3.37	3.13	2.48	1.73	0.91	0.13
Depreciation (H)	2.63	2.63	2.63	2.63	2.63	2.63
Sub Total (I)	6.49	6.29	5.66	4.94	4.14	3.40
Sales (J)	25.66	25.66	25.66	25.66	25.66	25.66
Contribution (K)	24.16	24.09	24.01	23.93	23.84	23.75
Break Even Point (L= G/I)	26.88%	26.10%	23.59%	20.63%	17.38%	14.31%
Cash Break Even {(I)-(H)}	15.99%	15.19%	12.64%	9.64%	6.35%	3.23%
BREAK EVEN SALES (J)*(L)	6.90	6.70	6.05	5.29	4.46	3.67

**Return on Investment**

₹ (in lakh)

Particulars / Years	1	2	3	4	5	6	Total
Net Profit Before Taxes	17.67	17.80	18.34	18.99	19.70	20.35	112.85
Net Worth	30.12	43.68	55.44	67.19	79.32	91.86	367.62
							30.70%

**Debt Service Coverage Ratio**

₹ (in lakh)

Particulars / Years	1	2	3	4	5	6	Total
<b>Cash Inflow</b>							
Profit after Tax	17.67	13.56	11.76	11.75	12.13	12.54	79.41
Depreciation	2.63	2.63	2.63	2.63	2.63	2.63	15.78
Interest on Term Loan	3.37	3.13	2.48	1.73	0.91	0.13	11.76
Total (M)	23.66	19.33	16.87	16.11	15.67	15.31	106.95

**Debt**

Interest on Term Loan	3.37	3.13	2.48	1.73	0.91	0.13	11.76
Repayment of Term Loan	3.00	6.60	7.20	7.80	8.40	4.35	37.35
Total (N)	6.37	9.73	9.68	9.53	9.31	4.48	49.11
Average DSCR (M/N)	2.18						

**Annexure 5 Details of procurement and implementation plan*****Project Implementation Schedule***

S. No	Activity	Weeks				
		1 - 2	2 - 4	4 - 6	6 - 8	8 - 10
1	Collection of quotations and order					
2	Delivery					
3	Commissioning and trial runs					

**Break up of process down time**

S. No.	Activities	days						
		1	2	3	4	5	6/7	8/9
1	Time required for dismantling or re-							
2	Civil works and curing							
3	Erection							
4	Commissioning and trial runs							

**Annexure 6 Details of equipment and service provider**

<i>Equipment details</i>	<i>Service/technology provider</i>
<b>Rapier looms</b>	<p>Laxmi shuttleless loom Pvt limited</p> <p>21, Punmaji Industrial Estate, Shahpur, Dhobighat,</p> <p>Ahmedabad – 380004 Gujarat, INDIA</p> <p>Phone: 91 (79) 2562-2510 / 2562-4393 / 2562-0604</p> <p>Fax: 91 (79) 2562-2845</p> <p>Mr. Hemang M. Shanghvi (Mobile 09824083935)</p>

## Annexure 7 Quotations of proposed equipment



AN ISO 9001-2000 COMPANY

Manufacturers of Shuttleless Looms

'Shanghvi Estate', G.S.T. Road, Ranip, Ahmedabad (Guj.)

Tel.: 91-79-25622510-25620604 ☐ 91-79-25622845

Web: www.laxmilooms.com e-mail: sales@laxmilooms.com

## PROFORMA INVOICE

Proforma No. KT-001  
Date: 18-09-2010M/s Krishna Textiles  
Hyderabad

Marks & Nos. / Container No.	Description of Goods	Nos	@ Rate	Total Amt. Rs.
-	<b>CM-TR SHUTTLELESS TERRY TOWEL FLEXIBLE RAPIER LOOM</b> with Cam Dobby with			
	Std. Accessories having 250 CM Reed Space.	4	575,000.00	2,300,000.00
	Add : Packing Charges	4	3,500.00	14,000.00
				<b>2,314,000.00</b>
	Add : Central Excise Duty @4.12%			95,337.00
				<b>2,409,337.00</b>
	Add : C.S.T. @ 2% Against 'C' Form			48,187.00
	Add: Insurance Charges			1,811.00
	<b>Total Amount Rs.</b>			<b>2,459,335.00</b>

## Terms &amp; Conditions:

1. Above Prices are Ex-Factory Ahmedabad.
2. Central Excise Duty: Central Excise Duty at present @ 4.12% but as applicable at the time of delivery.
3. Central Sales Tax: @ 2% against Form 'C' otherwise @ 5% or as applicable at the time of delivery.
4. Payment: 40 % Advance along with purchase confirmation and 60 % Balance payment against Proforma prior to dispatch of Looms.
5. Delivery : Within 100-120 days upon receipt of your confirmed order and advance.
6. Erection & Commissioning Charges : Extra + Service Tax
7. Transportation Charges : Extra
8. Validity of Offer : 30 days from the date of offer.

Signature &amp; Date

For, Laxmi Shuttle less Looms Pvt. Ltd.

E&amp;OE

Authorised Signatory

#### Technical Specifications of Auto Looms

Driving System	By Push Button Control On Both Side Of Loom
Running Speed	160-180 RPM
Reed Space	200, 230, 250, 260, 280 cm
Weft Insertion	Both Side Flexible Rapier System
Weft Colours	* Up to 6 Colours
Weft Detection	By Piezo Electronic Slide Sensor
Shedding Motion	* Electronic Dobby / Jacquard
Cloth Roll dia.	400 mm
Selvedge	Independent Positive Leno - Flase Selvedge Motion
Warp Yarn detection	2 Row Electrical Type For Top Beam & Ground Beam.
Braking System	By Electromagnetic Brake
Weft Selection	Electronic
Weft Feed	By Weft Feeder
Driving Motor	1.5 kw, 960 RPM
Applicable Yarn	Cotton, All Man Made Yarns
Terry Loop	By Movable Reed Operated By Solenoid.
Terry Loop Height	0-10 mm
Cramming Motion	Electronic
Control Panel	LCD System With Keypad For Programming of Dobby Shedding, Controlling of Terry Solenoid, Controlling of Cramming Motion, Display of Speed, Production, etc.
Beam Flange Dia.	Ground Beam: 600 mm, Top Beam: 750 mm
Lubrication	Centralised Lubrication System
Letting Off Motion	Electronically Operated for Ground / Pile Beam.
No of Operators	1 person for 6 looms

#### Technical Specifications of Conventional Power looms

Driving Motor Capacity	1 HP, 0.75 kW
Speed	960 rpm
No. of hours	12 hours
Production	10 kgs per batch
Shuttle	Yes
No. Of colours	Up to 4 colours
Operation	Manual
No of Operators	1 person per loom
Shuttle Changing	Manual

*Based on above, it is beneficial for replacing the conventional power looms with rapier looms*

**Standard application form for financial assistance to existing units  
(upto and including Rs. 50 lakh)**

**I      Applicant details**

1	Name of Unit	
2	Address for correspondence	
3	Constitution	
4	SSI Registration. No.	
5	Date of Incorporation	
6	Date of Commencement of Operations	
7	Activity / Industry	

	Registered Office	Factory / Service Establishment (existing)	Factory / Service Establishment (proposed)
Full Address			
Contact Person(s)			
Tel No.			
Fax No.			
E mail address			

**II      Promoters/Directors**

Bio-data of all the promoters/directors of the unit (Preferably make separate sheet for each promoter/director)

Promoter/Director	
Name	
Full Address( incl Tel no./ mobile no)	
Age	
Passport No.	
Father's / husband's name	
Qualification	
Experience	
Functional responsibility in the unit	
Relationship with Chief Promoter	
Shareholding in the unit	
Net worth	

Pl. furnish details of any other shareholder having more than 5% in the unit.

**III.      Products Manufactured**

Sl. No.	Product	Installed capacity p.a.	Present capacity utilisation	End use of product	Export orientation
					Yes/ No



**IV. Existing Facilities with Banks /FIs incl. SIDBI**

a	Name of the Bank(s) / FI, Branch,	
b	Dealing person and contact tel. no.(s) ..	
c	Dealing since (each Bank / FI)	

Facilities enjoyed :

Nature of facility (bankwise)	Amount (Rs. lakh)		Rate of interest	Nature of Security and value
	Sanctioned	Outstanding as on ____		
Fund based				
Basedkfdffkldkfdkfdkfdkfdkfdif				
-Term Loan				
-Working capital				
Non Fund Based				

Are there any defaults ? Yes/No

**V. Financial Position of applicant unit/ associate concern**

(Rs. lakh)

	Net-worth			Sales			Net profit		
	Y1	Y2	Y3	Y1	Y2	Y3	Y1	Y2	Y3
Applicant unit									
Associate concern I									
Associate concern II									

Details of Associate concerns to be given as per **Annexure I**.

**VI. Project Details**

6.1. Purpose for which assistance now required :

	Purpose	
1	Indicate whether Expansion /diversification / modernisation and details	Technology Upgradation for Energy Efficiency
2	If new products envisaged give details	N/A
3	Details of expected incremental qualitative / quantitative benefits	Saving in the fuel bill to the extent of 20-25% leading to commensurate improvement in the bottom line of the applicant unit.
4	Expected month/year of implementation	8-10 weeks
5	No. of employees existing and additional	

**Cost of Project**

(Rs. Lakh)

S. No	Details	Total Amount
1	Civil Works	1.50
2	Plant & Machinery (incl. installation) * -Indigenous -Imported	47.09
3	Professional charges	-
4	Erection & commissioning charge	-
5	Preliminary & pre-operative expenses [Loan syndication fee etc.] &	1.21

6	Taxes(CST)	
7	Contingency	-
<b>TOTAL</b>		<b>49.81</b>
<i>* Details of Plant and machinery/ Misc. fixed assets at <b>Annexure II and III</b></i>		

Indicate details of expenditure already incurred, if any and how the expenditure was financed ?

**6.3. Means of Finance**

(Rs. Lakh)

S. No. No.	Details	Total
1	Additional share capital / Internal accruals	12.45
2	Interest free Unsecured Loans	-
3	Term Loan proposed from SIDBI / Banks inclusive of subsidy #####	37.35
	<b>Total</b>	<b>49.81</b>
<b># ### In terms of existing guidelines of Ministry of MSME . Gol the subsidy amount is received on implementation of the project Sav within 3 months therefore the amount of subsidy is included in the term laon amount as bridge loan and funded by the bank On receipt of the subsidy from the Gol it is adjusted towards the loan amount.</b>		

6.4 Whether additional Working Capital required for the unit. If yes, amount and arrangements proposed may be indicated:

**6.5 Technology**

S. No.	Item	
1	Any Technical collaboration? If yes, details	
2	Details of main technical professionals employed	
3	Any quality certification obtained ? If yes enclose certificate.	

**6.6 Raw material / Labour/ Utilities**

1	Raw material (Details, arrangement, sources and distance)	
2	Power	Connected Load  Utilised load  Requirement of power for Additional machines  Back-up arrangement (DG)
3	Other critical inputs if any	

**6.7 Marketing & Selling Arrangements**

Items	Applicants remarks
Main Markets (Locations)	
Main buyers, Indicate clearly if the unit is relying on a single buyer	
Indicate competitors	
Whether product has multiple applications	
Distribution channels ( e.g. direct sales, retail network, distribution network )	
Marketing team details, if any.	
Orders on hand (enclose copies)	

6.8 **Projected profitability** : Statement to be enclosed as per **Annexure IV**.

6.9 **Others**

Items	
Please indicate the various licenses / consents for the project / unit already obtained from the respective authorities	
Please indicate licenses / consents for the project / unit that are yet to be obtained.	
Category as per pollution control dept. If polluting, pollution control measures taken	
Whether the project is entitled for any govt. subsidy, tax exemptions. Details thereof	
Repayment period (in months) sought including repayment holiday requested, if any,	
Details of Collateral security offered and value (basis).	
List of guarantors for the proposed loan	

**Enclose documents as indicated in the check list at Annexure V.**

6.10 **Strengths / Weaknesses of the borrower** (such as market standing, product/ service differentiation, technical expertise, infrastructure facilities etc.)

Strengths	
Weaknesses	

### **DECLARATION**

I/We certify that all information furnished by me/ us above and in the appendix/ annexures/ statements and other papers enclosed is true; I/we have no borrowing arrangements for the unit with any bank / FI except as indicated in the application; that there are no overdues / statutory dues/government enquiry/proceedings/prosecution against the unit/associate concerns/ promoters/directors except as indicated in the application; that no legal action has been/ is being taken against the unit/associate concerns/promoters/directors; that I/ we shall furnish all other information that may be required by SIDBI in connection with my/our application and I/ We have no objection to your furnishing the information submitted by me/ us to any agency as you may deem fit in connection with consideration of the assistance. We have no objection to SIDBI/ its representatives making suitable enquiries while considering the application.

**Place :**

**Signature**

**Date**

**Name & Designation**

### **Annexure I**

#### **Details of Associate Concerns**

Name , Address & products manufactured	Existing since	Name & Address of existing Banker (s)	Facilities Enjoyed	Share holding of the main promoter(s) of applicant unit

### **Annexure II**

#### **Particulars of machinery proposed for the project**

Name of machinery, (model / specification)	Name of manufacturer, contact person, e-mail address telephone no.	Lead time for delivery of machinery	Invoice price (for indigenous machinery) / CIF price (for imported ) (Rs. lakh)	Purpose /use of machine	Basis of selection of supplier	Remarks reg. after sale service etc.
Rapier machines	Laxmi shuttleless loom Pvt limited 21, Punmaji Industrial Estate, Shahpur, Dhobighat, Ahmedabad – 380004 Gujarat, INDIA Phone: 91 (79) 2562-2510 / 2562-4393 / 2562-0604 Fax: 91 (79) 2562-2845	3 Weeks	24.59	Weaving of cloths	Credibility of the Technolgy Provider	

- Furnish competitive quotations, catalogues / invoice for each machinery proposed to be acquired
- In case of second hand /fabricated machinery, indicate the need / reasons for acquiring such machinery. Also enclose Chartered Engineer's certificate regarding residual value and life in respect of second hand machinery.

### **Annexure III**

#### **Details of Misc. Assets / equipment Proposed**

S.No.	Name of item	Supplier	Cost (Rs. lakh)	Purpose/ use of MFA	Remarks

## Annexure IV

**Profitability projections for the Unit/ Company as a whole\***

S.No.	Item	Actuals for previous year	Y1	Y2	Y3	Y4	Y5	Y6	TOTAL
1	Total Income		25.66	25.66	25.66	25.66	25.66	25.66	153.94
2	Raw materials								
	Power and fuel								
	Wages and salaries								
	Selling expenses								
	Other expenses		1.99	2.09	2.20	2.31	2.42	2.54	13.55
	Total Cost		1.99	2.09	2.20	2.31	2.42	2.54	13.55
3	Profit before depreciation, Interest and taxes (PBDIT) (2 - 1)		23.66	23.56	23.46	23.35	23.23	23.11	140.38
4	Interest on Term Loan		3.37	3.13	2.48	1.73	0.91	0.13	11.76
5	Interest on Working Capital								
6	Interest on unsecured loans								
7	Depreciation		2.63	2.63	2.63	2.63	2.63	2.63	15.78
8	Profit before Tax (3 - 4 - 5 - 6 - 7)		17.67	17.80	18.34	18.99	19.70	20.35	112.85
9	Tax		0.00	4.24	6.59	7.24	7.57	7.81	33.44
10	Profit after Tax (8 - 9)		17.67	13.56	11.76	11.75	12.13	12.54	79.41
11	Dividends/ Withdrawals								
12	Cash Accruals ( 10 - 11 + 7)		20.3	16.19	14.39	14.38	14.76	15.17	95.19
13	Repayments of all term liabilities (Principal)		3.00	6.60	7.20	7.80	8.40	4.35	37.35
14	Debt Service Coverage Ratio ((10+7+4)/(13+4))		3.72	1.99	1.74	1.69	1.68	3.41	2.18
15	Average DSCR (Total of 10+7+4 for projected period/(Total of 13+4 for projected period)					2.18			

\* Please give projections for the entire tenure of SIDBI / Bank loan.

**Annexure V**

**CHECK LIST of documents to be  
submitted along with the application**

S. No.	Documents	Y/N	Reasons for Non-submission
1	SSI Regn. / CA certificate certifying SSI status		
2	Certified copies of Memorandum & Articles of association / Partnership Deed		
3	Audited financial results for the last three years of Applicant unit		
4	Copies of lease deed / sale deed on which the unit is situated		
5	Copies of sanction letters from commercial banks / FIs which have sanctioned assistance to the unit		
6	NOC from pollution control board/consent letter, if applicable		
7	IT Returns/Assessment orders/Sales tax returns of the Applicant Unit/ promoters/directors for 2 years		
8	List of existing plant and machinery		
9	Competitive quotations for machines and Misc. fixed assets proposed to be acquired under the scheme		
10	Duly signed latest net worth statements of promoters/directors & guarantors in SIDBI format; In case of guarantors please furnish, Name, Age, Father's/Husband's name, residential address. Details of similar guarantee, if any, given to other institutions		
11	2 sets of photographs along with signatures of all promoters/directors/guarantors duly certified by a Bank or Gazetted Officer.		
12	Audited financial results for last three years for each associate concerns. If applicable.		
13	Copy of title deed of collateral security and valuation report		

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