

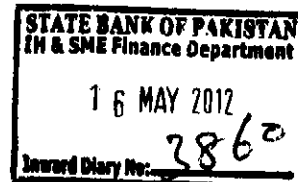
No.3(18)TID/12-P-I  
Government of Pakistan  
Ministry of Textile Industry  
\*\*\*\*\*

Islamabad, the 14<sup>th</sup> May, 2012

From: **Ch. Ramzan Ali,**  
Deputy Secretary (Policy)

To: 1. **Syed Shehzad Zaidi,**  
Director (FEO),  
State Bank of Pakistan,  
Karachi

2. **Mr. Qasim Nawaz,**  
Managing Director, BSC  
State Bank of Pakistan,  
Karachi



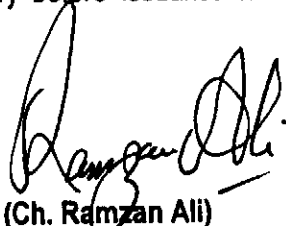
✓ 3. **Syed Samar Hassnain,**  
Director (SMFED),  
State Bank of Pakistan,  
Karachi

Subject: **Technology Up-gradation Support Order 2012**

I am directed to enclose herewith the Notification of this Ministry bearing No.3(18)TID/12-P-I dated 08.05.2012 for information, record and further necessary action.

2. It is requested that necessary instructions for implementation of the said Order may please be drafted by the SBP and may be shared with this Ministry before issuance to Banks/DFIs.

Encl: As above

  
(Ch. Ramzan Ali)  
Deputy Secretary (Policy)  
Ph. 051-9215665

Government of Pakistan  
Ministry of Textile Industry  
\*\*\*\*\*

Islamabad, the 14<sup>th</sup> May, 2012

**Notification**

**No.3(18)TID/12-P-I** In partial modification of Ministry of Textile Industry Order titled "Technology Up-gradation Support Order, 2010" issued vide Notification No.3(18)TID/10-P-I dated 5<sup>th</sup> April, 2010, the following amendments shall be made:-

2. Para 4(1) shall be substituted with the following and will read as:-

"For projects of loan based investment in machinery or technology, the Federal Government will pick up 50% of mark-up subject to maximum of 5 percentage points p.a., whichever is less with a cap of Rs. 50 million per annum.

3. Para 4(2) shall be substituted with the following and will read as:-

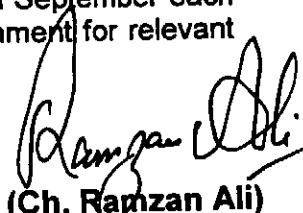
"For projects with equity investment in machinery and technology, the Federal Government may provide grant up to 5% of the equity (based on L/C document) for new Plant and Machinery with a cap of Rs. 50 million. For projects with investment (loan or equity based) in machinery and technology not exceeding Rs.10 million, the Federal Government may provide grant up to 20% of the capital cost for new Plant and Machinery only as Investment Support to SMEs as defined under the SBP Prudential Regulations for SMEs."

4. Para 6(6) shall be substituted with the following and will read as:-

"The Mark-up Support and Investment Support shall cover only the technology and machinery identified under this order contained in the "TUF Document", as per eligibility criteria determined by a Technical Committee chaired by the Secretary to be constituted and notified by the Ministry of Textile Industry. If any question of interpretation or clarification is raised as to the machinery under the scheme, the decision of the Technical Committee will be final. The Government may periodically review and revise the list in consultation with the industry".

5. Para 7(1) shall be substituted with the following and will read as:-

"Mark-up support and Investment Support shall be paid by the commercial banks after fulfillment of eligibility criteria notified in the "TUF Document" by the unit on six month basis in March and September each year subject to release of funds by the Federal Government for relevant fiscal year".



(Ch. Ramzan Ali)  
Deputy Secretary (Policy)  
Ph.051-9215665

**The General Manager,  
Printing Corporation of Pakistan Press,  
Islamabad.**

## Technology Up-gradation Fund (TUF) Scheme

### **Introduction:**

1. The Ministry of Textile Industry issued 'Technology Up-gradation Support Order 2010 through Notification No.3(18)TID/10-P-I dated 5th April, 2010. According to the notification, the Federal Government will reimburse 50% of mark-up subject to a maximum of 5 percentage points p.a., whichever is less for loan based projects in machinery or technology. For projects with equity investment in machinery and technology, the Federal Government may provide grant up to 5% of the equity (based on LC document) for new Plant and Machinery with a cap of Rs. 50 million. For projects with investment in machinery and technology not exceeding Rs. 10 million, the Federal Government may provide grant up to 20% of the capital cost for new Plant and Machinery only as "Investment Support". This support will be available to SMEs as defined under the SBP Prudential Regulations for SMEs. The scheme takes effect from September 01, 2009 and shall remain valid up to June 30, 2014. Disbursements under this Order will continue for the duration of loans till June 30, 2024. The repayment period shall not exceed ten years including grace period as may be allowed by the SBP.

2. The Textiles Policy states that the units availing the Technology Up-gradation Scheme would be required to establish that their investments will have at least one of the following characteristics:

- i. Improve overall technological configuration of the sector;
- ii. Remove critical imbalances in the value chain; or,
- iii. Achieve compliance with international standards

### **Technical Committee:-**

3. Technological Up-gradation Notification Order states "The Mark-up Support and Investment Support shall cover only the technology and machinery identified under this Order by a Technical Committee chaired by the Secretary to be constituted and notified by the Ministry of Textile Industry. If any question of interpretation or clarification is raised as to the machinery under the scheme, the decisions of the Technical Committee will be final".

4. As per the Notification Order, a Technical Committee chaired by Secretary, Ministry of Textile Industry has been constituted. The Technical Committee consists of members from the private sectors including chairmen of textiles associations. List of the Technical Committee Members is attached.

### **Inter Ministerial Committee:-**

5. The Cabinet Committee on Textiles will review the TUF Scheme on yearly basis.

## **Scope of the Scheme:-**

6. The machinery used for the processing/production of fiber, filament, yarn, fabric, or any other article made wholly or in part with the fiber along with the machinery to improve efficiency, productivity, information communication technology, energy and environmental compliance in identified machinery/technologies as defined by the Technical Committee.

7. Machinery used for the manufacturing of machines used for the production of textiles chemicals, machinery and accessories will be included in later stages.

8. Domestic machinery manufacturers, textiles dyes and chemicals and accessories units would also be required to be registered with the Ministry of Textile Industry. The Technical Committee will decide their inclusion and procedures including eligibility criteria.

## **Eligibility Criteria for Assistance**

### **Eligible Units**

9. As per the Notification Order, mark-up support and investment support shall be provided to existing and new textiles units registered with Ministry of Textile Industry.

10. The unit availing the support shall be a registered sole proprietor, partnership or a company and shall be a member of a textiles associations or Chamber of Commerce and Industries registered with the Directorate of Trade Organizations, Ministry of Commerce.

11. The units shall comply by all social, environmental and other regulations of the Government.

12. The receipt of TUF support shall be properly reflected in the book of accounts or balance sheets of the unit.

13. The unit availing the benefit may provide an affidavit of abiding by the rules of TUF scheme.

14. The unit cannot reapply for the facility within three years of the date of import of machinery of the previous application.

### **General Eligibility Conditions**

15. New units shall set up their entire facilities with appropriate eligible technology

16. Only new and imported machinery is permissible at this stage. Sub-committees on sectoral basis may allow 3-4 years old and/or domestic machinery of appropriate technologies.

17. The machinery shall be installed outside the limits where city government restrictions have not been imposed.

18. Machinery with technology levels lower than that specified in annexure will not be permissible for facilitation under the TUF scheme.

19. Balancing equipment or equipment required for de-bottlenecking the production process will also be eligible for funding under TUF. However, increased production by shifting to coarse products will not be allowed.

20. Eligibility of any other textile machinery equal to or higher than the benchmarked technology not listed in the annexure or developed in the course of the operation of TUFs will be, suo moto or on reference, specifically determined by the Technical Committee.

21. There will be no cap on investment for mark-up support; however, The assistance/facilitation/interest re-imbusement to one unit will have a cap of Rs. 50 million per annum. In case the unit has gone for matching capacities in backward and/or forward integration the cap for each sub-sector will be treated separately.

22. The Mark up support will be available from the date of retirement of LC or interest charged however reimbursements will start after the commercial commencement of the unit.

23. Inspection will be conducted by a manner to be prescribed by the Ministry of Textile Industry for certification the commercial operations of the unit and meeting the eligibility criteria and will be continued for the period of the loan.

24. The Textile Commissioner Organization will certify the commissioning of machines and commercial operations.

25. The unit cannot apply for both components (markup and investment support) of the TUF scheme. The unit applying for one component will be ineligible for other component.

#### **Special Instructions for Investment Support Scheme**

26. Other than the general conditions stipulated above, following conditions will be applicable for equity based investments and loans for small and medium enterprises as defined by State Bank of Pakistan regulations.

27. Investment support will be available to one company on one time basis.

28. To avail support the unit will apply through their bank and would submit project proposal.

29. The grant will be provided in phases after commissioning and operations in next two years in four equal installments.

30. The unit will install and commence the operations and inform Textile Commissioner Organization and bank.

31. After certification by the Ministry of Textile Industry, the requisite documents will be submitted to State Bank through dealer bank for initiation of payment in phased manner.

32. The unit availing the benefit shall at least function for next two years under the same ownership.

33. The unit will keep record of commercial operation for next two years.

34. The units other than SME will provide bank guarantee equivalent to support available. Mode of bank guarantee will be decided by the State Bank of Pakistan. The bank guarantee will have a life of not less than two years to a maximum of bank loan time period. The guarantee will invoke in case the claimant of this support does not comply with the conditions as notified in the TUF notification and this document.

## **Common infrastructure or facilities**

35. Investment in common infrastructure facilities owned by the association, trust or Garment Cities, Textile City, Consortium of the units participating in the TUF scheme, to the extent necessary for this purpose, includes the following :

- (1) Common captive power generation
- (2) Common effluent treatment plant
- (3) Common sheds for weaving

## **Sector Specific Eligibility Conditions:-**

### **Ginning**

36. The unit shall conform the conditions as laid down in the Cotton Control Act and Cotton Standardization Ordinance.

### **Fiber & Filament**

37. Replacement of existing obsolete machinery, capacity expansion or installation of new units with appropriate eligible technology is permitted.

### **Spinning [cotton, polyester and polyester-cotton, viscose, acrylic, spandex]**

38. New units or capacity expansion in an existing unit for coarser count up to 32/1 will be permitted only if investment is also made in downstream 50% matching capacity in specialized yarn (inbuilt technology in ring frame or attachments including compact, lycra, slub etc), yarn processing or weaving or knitting or fibre dyeing which must be installed simultaneously or to enhance average count to above 32/1.

39. New units or capacity expansion in an existing unit will be permitted if producing yarn above 32/1 Ne i.e. there is no restriction for count above 32/1 for installation of matching capacity or replacement.

40. New or capacity extension for existing units based on Open End technology are allowed irrespective of counts, forward or backward linkages.

41. Value added attachments including lycra, compact etc., fibre dyeing and post spinning processes are allowed irrespective of count.

### **Wool, silk, and jute**

42. Replacement of existing obsolete machinery, capacity expansion or installation of new units with appropriate eligible technology is permitted.

### **Shuttle weaving**

43. Minimum 36 looms with or without dobby/jacquard may be installed

44. Loom shall have appropriate configuration (consisting of stop motions and bobbin change) etc

45. For handloom specified feature without the use of power

### **Shuttle-less Weaving**

46. Replacement of existing obsolete machinery, capacity expansion or installation of new units with appropriate eligible technology is permitted.

### **Independent weaving preparatory (warping and sizing)**

47. Replacement of existing obsolete machinery, capacity expansion or installation of new units with appropriate eligible technology is permitted.

### **Knitting**

48. Replacement of existing obsolete machinery, capacity expansion or installation of new units with appropriate eligible technology is permitted.

### **Processing Machine**

49. Processing machinery feasible for made ups fabric will be permitted only if investment is also made in 50% matching downstream stitching capacity.

50. Narrow width machinery feasible for garments manufacturing may only require 25% matching capacity in downstream stitching.

51. To facilitate environmental compliance Effluent Treatment Plant has been included in machinery list.

### **Garment and Made ups stitching**

52. Replacement of existing obsolete machinery, capacity expansion or installation of new units with appropriate eligible technology is permitted along with necessary equipment.

### **Power Plants**

53. Captive Power Plant may be allowed as it is covered in Textiles Policy and shall be allowed to 15% of the total cost of the machinery. The technology for the power plant may consist of gas along with alternate energy.

### **Interpretation of Machinery:**

If any question of interpretation or clarification is raised about the eligibility of any unit or machinery the Technical Committee headed by the Secretary Ministry of Textile Industry decision will be final.

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## Annexure

### **Ginning Machine:**

1. Ginning Machine
2. Pre-Cleaner
3. Lint Cleaner
4. Conveyor System
5. Bale Press
6. Humidifier / Moisturizer
7. Foreign Fiber Detector



## Spinning:

1. Fully automatic bale handling, plucking, peeling and blending grab machine with microprocessors
2. Blow Room
  - a. Sophisticated blow room machinery for cotton fiber and its blends consisting of pre-cleaners, opening and cleaning machines with chute feeding system or lap making system, metal detector, micro dust remover and de dusting condensers (for open end rotor spinning) with or without foreign fiber detector / remover.
  - b. Sophisticated blow room machinery for synthetic / regenerated fibers and their blends consisting of opening and cleaning machines with chute feed system or lap making system, metal detector with or without foreign fiber detector / remover.
  - c. Foreign fiber detector with camera, Automatic bale plucking machines & sophisticated cleaning machine equipment in the existing blow room line.
3. Automatic waste extraction system for card, gill box, comber and ring frame with or without waste recovery / recycling machinery.
4. Card
  - a. High production card capable of producing sliver above 100 kgs/hr with auto leveler.
  - b. High production card for lap feed system capable of producing sliver above 100 kg/hr with or without auto leveler.
5. High production draw-frame with delivery speed of 750 meters and above /minute with / without auto leveler
6. Lap former
7. High speed combers of 450 nips/minute and above
8. Speed-frame with 1500 r.p.m. and above
9. High speed ring frames having spindle speed of 25000 r.p.m. and above
10. Open end rotor of 150000 r.p.m and above and other modern spinning systems, such as DREF, PARAFIL, SELFIL AND AIRJET

11. Automatic cone winding machine operating at the speed of 2000 meters per minute and above and /or cheese winding machine with cleaner
12. Electronic yarn clearers and splicers for up-gradation of existing automatic winding machines
13. Two-for-one/Three-for-one twisters operating at the speed of minimum 10000 rpm & 8,000 rpm respectively
14. Yarn conditioning machine
15. Industrial Humidification system with air washer plant and air filters to maintain RH and temperature with / without de-humidifiers (Chillers)
16. Dust/particulate material separators/collector (Air Pollution Control)
17. Overhead cleaner for spinning & winding
18. Device for manufacturing core spun yarn
19. Parallel winding machine with individual control management and length measuring device
20. Process control equipments:
  - a. Electronic yarn clearers for up-gradation of existing automatic winding machines
  - b. "Automatic Plant Controls" for the Humidification Plant for controlling and maintaining R.H.
  - c. "Invertors/Opti speed" for Ring frames for changing the spindle speed throughout the doff according to a set pattern, so that yarn breakages are minimized etc.
  - d. "Ring Eye" under Information Technology, since the equipment monitors the yarn breaks in a ring frame, identifies rogue spindles which give more number of breaks, indicates the production of the Ring frame through computer.
21. Air Compressor 15 H.P. and above
22. Direct double yarn twisting attachment at Ring Frame (e.g. Elite twist attachment for spinning machine).
23. Friction spinning

## **Machinery for Cotton Waste Recycling Plant**

1. Automatic soft cotton waste recycling machine
2. Automatic hard cotton waste recycling machine
3. Automatic bale press system (Packing)
4. Automatic cotton dust, seed collection & filtration system

## **Man-made Fibre**

1. Digital Control System (DCS)
2. MCC inverter panels, inventers, UPS control panels AND I/O panels
3. Agitators for reactors and vessels
4. Air compressor station
5. Steam generation unit
6. Steam cascade
7. Nitrogen generation unit
8. Water treatment plant
9. Lifting hoists
10. Monorails for hoists
11. Thread oiler device
12. PTA dosing system equipment
13. PTA conveying system including Nitrogen compressors, coolers, rotary feeders, filters and diverters etc.
14. Filter housing for MEG, DEG, TiO<sub>2</sub> and catalyst
15. Blower
16. EG jet system
17. Prefabricated polymer melt line complete with HTM jacket for spinning line
18. Preheating oven
19. Heating cooling circuit
20. HTM pumps, Glycol pumps and other centrifugal pumps
21. HTM heaters
22. HTM evaporators
23. Inline control valves for HTM
24. HTM vent cooler
25. HTM filling
26. Polymer pumps
27. Polymer valves
28. Test chamber
29. Spinnerets

30. Spinneret vacuum cleaning unit
31. Heat exchangers
32. Spin packs
33. Spin packs trolley
34. TEG cleaning vessels, evaporation vessel, TEG condensers and vapour condenser
35. TEG pump, caustic pump, glycol evaporators, condensers, coolers etc.
36. Pearl mills and centrifuge
37. Sealing and lubrication system
38. Air heater / cooler
39. Polymer coolers
40. Polymer filters and special tools
41. Gears for polymer equipment
42. Chip conveying system equipment
43. Chip bagging station
44. Fiber Line
45. Fiber draw off line
46. Can draw off creel
47. Tow can material
48. Tow guides for creel
49. DRR and PP Reactors
50. Scraper condensers
51. Under water granulators, dryers, over length separators and die heads
52. Spinning beams
53. Manipulator for spinning lines
54. Tilting station
55. Quench air measuring device
56. Quench air control flaps
57. Quench air and ventilation system
58. Quench duct
59. Static Mixers

- 60. Oligomer vessel / catch pot
- 61. Viscometer
- 62. Ultrasonic cleaning device
- 63. Spin finish filters
- 64. Grinding machine for crimper & Cutting knives
- 65. Can transporters, bale transporters
- 66. Bailing machine
- 67. Scale for baler

## **Filament Yarn**

1. Chip Drying System
2. Spinning Machinery
3. Take up Machine
4. POY Auxiliary Equipment
5. Draw Texturing Machine
6. Draw Twister Machine
7. Draw Winder Machines
8. Two for One Twisters
9. Pirn Winders
10. DFT Machines
11. Package Winder
12. Vacuum Heat Setter/Auto Clave

## **Fiber/yarn Testing Equipments**

1. Modern fiber testing instruments viz., high/medium / low volume instrument for checking length, strength, micronaire, maturity, trash, color etc
2. Evenness tester
3. Yarn fault classification equipment i.e. classimat, classidata etc
4. Equipments for testing neps, length, diameter, maturity, trash, viz., AFIS, advance fiber information system, rapid tester, etc
5. Single yarn tenacity tester, viz. tensojet, statimat etc
6. Tenacity / fiber crimp measurement instrument
7. Modern yarn testing equipment, viz., twist tester, hairiness tester, tension tester, co-efficient of friction tester, etc
8. Moisture tester
9. Packing density tester
10. High precision weighing balance
11. Computerized lea strength testing machine for CSP, count and CV% for CSP & count



## **Wool scouring, combing and spinning machinery for worsted System of spinning**

1. Sophisticated wool scouring machine with or without carbonizing plant / line
2. Fiber opening/blending/cleaning/dusting machine
3. High production worsted cards capable to give above 80 kg. production per hour
4. High speed intersecting Gill box/Chain Gills/Rotary Gills/vertical Gill box of delivery speed of minimum 500 meters per minute
5. Drawing set /Roving frame /Rubbing frame of delivery speed of 300 meters per minute
6. High speed worsted ring frames of 14000 rpm & above with or without spinning attachment /or auto doffers
7. Jumbo Spinning Frames
8. High speed rectilinear comber of 300 nips per minute and above
9. Two-for-one/Three-for-one twisters operating at speeds of minimum 10000 rpm & 8000 rpm respectively
10. Yarn conditioning machine
11. Assembly winding machine with micro process control
12. Precision cone winding machine
13. Air splicers
14. Automatic waste extraction system for card, gill box, comber and ring frame with or without waste recovery/recycling machinery
15. Baling press for wool combing

### **Machinery for woolen spinning system**

1. Wool scouring machine
2. High production carding machine
3. Gill Box for semi-worsted yarn
4. Speed frame
5. Ring frame
6. Modern spinning system (DREF)
7. Winding machine 1500 meters per minute
8. Automatic waste extraction system for card with or without waste recovery / recycling machinery

## **Machinery for Carpet Industry**

1. Machinery for carpet yarn manufacturing
  - a. Machinery for woolen / semi-worsted yarn
    - i. Assembly plying
    - ii. Reeling / hank to cone winding / cheese & cone to cone winding
  - b. Machinery for other yarns
    - i. Chenille spinning
2. Machinery for dyeing & finishing of yarns used for carpet industry
  - a. Steam dryer
  - b. Spectrophotometer
  - c. Space Dyeing
  - d. Chem-set machine / twist set
  - e. Tape scour
  - f. Sample dyeing machine
  - g. Ancillary items
    - i. Water Treatment / Softening Plant
    - ii. Carving/ Embossing/ Shearing equipment
    - iii. Vacuum suction for cleaning of carpet
3. Machinery for woven carpet
  - a. Axminster weaving
    - i. Spool gripper
    - ii. Jacquard gripper
  - b. Wilton weaving
    - i. Wire loom weaving / Brussels weaving
    - ii. Face to face weaving
4. Other carpet manufacturing machinery
  - a. Pass tufting
  - b. Needle felting
  - c. Fusion bonding
  - d. Carpet shearing & J box / J scrays

- e. Carpet back coating / coating & drying line for latexing & finishing of carpets
- f. Carpet over locking / over edging machine
- g. Carpet label machine
- h. Carpet winding / baling machine
- i. Carpet inspection / rubbing machine
- j. Carpet fringing machine
- k. Carpet printing machine
- l. Carpet tile backing / coating / latexing & cutting line
- m. M-tuft (Modra-tuft)
- n. Kibby
- o. Ned graphic
- p. Weave link

5. Carpet testing equipment

- a. Tuft withdrawal tensometer
- b. Wear and abrasion tester
- c. Hexapod walker tester
- d. Carpet dynamic loading tester
- e. Carpet static loading tester
- f. Carpet pile height tester
- g. Carpet thickness tester
- h. Carpet flammability tester
- i. Light fastness tester
- j. Launder-o-meter
- k. Crock meter
- l. Extractor

## **Weaving Machine:**

1. Single yarn sizing machine
2. High speed multi cylinder sizing machine/zero twist sizing machine
3. Super high speed direct beam warping with creel (for shuttleless looms)
4. High speed direct beam warping with creel (for shuttleless looms in the case of woolen units)
5. High speed direct beam warping with creel (for automatic looms)
6. Warp tying machine
7. Automatic drawing-in-machine/Reaching-in-machine
8. Fully automatic pirn winding machine (for automatic looms)
9. Hydraulic beam lifting trolley (for shuttleless looms)
10. Computer aided design system for weaving
11. Two-for-one twister / Three-for-one twister operating at the speed of minimum 10000 rpm & 8000 rpm, respectively
12. Draw warping and sizing machine
13. False twist - texturizing machine having 800 meters / min speed
14. Fancy yarn twisters and doublers with micro processors / Cut Chenille Yarn machine / power driven flat bed knitting machine for manufacture of fancy yarn
15. Yarn singeing machine
16. Sectional warping machine with auto stop & tension control
17. Dyeing and / or bleaching machine for yarn in package form
18. Pirn winding machine
19. High speed multi-cylinder vertical exit warping machine
20. Auto reeling stitch machine
21. Beam Trolley
22. Warp Leasing machine
23. Dobby design card punching and copying machine
24. High speed computerized warping / sectional warping machine
25. Filament winding machine

26. Shuttle less loom. Including computerized tappet, dobby and jacquard, for Air jet and Water jet looms with weft insertion rate of
  - a. 600 r.p.m and above for Projectile looms
  - b. 1,000 r.p.m and above for other shuttleless looms
27. Shuttleless loom (for woolen units)
  - a. 500 r.p.m and above for Projectile looms and
  - b. 700 r.p.m and above for other shuttleless looms.
  - c. For SME units, the weft insertion rate of Rapier and projectile shuttleless looms may be 250 r.p.m and above.
28. Automatic shuttle loom
29. Terry towel loom (fully automatic or shuttleless)
30. Corduroy and/or velvet loom and/or automatic loom for cut-pile fabrics
31. Canvas loom
32. Power driven chenille loom
33. High speed needle loom for tape/belt weaving
34. Auto control type of humidification plant (for shuttleless loom shed)
35. Modern industrial humidification system for controlling relative humidity & temperature (for automatic loom shed)
36. Over head cleaner for shuttle less looms
37. Dust separator
38. Computerized label making machine
39. Fabric embroidery machine
40. Jacquard and Dobby on stand-alone basis
41. Power driven cloth cutting machine/laser fabric or label cutting machine
42. Air Compressor 15 H.P. and above
43. Tufting machine with electronic process controls
44. Heavy duty shuttleless weaving machine for production of technical textiles
45. Heavy duty tape weaving
46. Bi- axial & Multi-axial weaving machinery
47. Multi-phase weaving machine
48. 3-D and Block weaving machine

49. Needle looms for narrow woven fabrics
50. Circular looms
51. Sampling shuttleless loom

**Knitting:**

1. High speed circular knitting machine
2. High speed socks knitting and gloves knitting machines with or without electronic jacquard
3. Computerized flat bed knitting machine with minimum speed of 11 revolutions per minute
4. Warp knitting machine
5. High speed computerized warping machine for knitting.
6. Computerized label making machine
7. Computerized Strap (Collar/Cuff) Flat Bed Knitting Machine
8. Modern industrial humidification system for controlling relative humidity & temperature
9. Weft Inserted Warp Knitting machine
10. Knitting machine for spacer fabrics
11. Bi- axial & Multi axial knitting machine
12. Tricot machinery
13. Double needle bar Machine
14. Machine for netting
15. Net making machine by warp knotting system
16. Circular warp knitting machine for compression garments
17. Stitch bonding machine
18. Air Compressor 15 H.P. and above

## **Processing Machinery:**

1. Shearing / Cropping Machine
2. Yarn / Fabric Singeing Machine / Gassing Machine/Singeing cum de-sizing machine
3. Fabric reversing Machine
4. Cone to hank winding machine
5. Weight reduction / Scouring machine
6. Pressure Kier with automatic liquor circulation with or without auto piler
7. Open width/rope washing machine
8. Open width rope opening and squeezing machine with de twister
9. L. box / J. box
10. Solvent scouring machine/Vapor lock machine
11. Rotary drum Washer (HT/HP or ordinary type)
12. Wet fabric spreading and squeezing Machine
13. Hydro-extractor
14. Slit opening machine
15. Star winch machine
16. Float dryer with / without Padding Mangle
17. Yarn/Fabric mercerizing machine
18. Package dyeing machine for cone, cheese, tops, fibers, dye springs, yarn beam etc
19. Fiber cake opener for fiber dyeing machine
20. Hopper feeder for fiber dyeing machine
21. Fiber cake press with or without hydraulic system for pressing for fiber dyeing machine
22. Cabinet type Yarn dyeing machine
23. Yarn conditioning machine
24. Automatic dyeing jigger/Jumbo Jigger with or without liquor circulation and auto dosing
25. Jet dyeing machine
26. Soft flow dyeing Machine

27. Semi automatic flat bed screen printing machine
28. Roller wax printing machine
29. Transfer printing machine (for synthetics)
30. Continuous washing range with minimum 3 chambers
31. Pad steam range
32. Precision flock cutting / printing machine for textile processing unit only
33. Loop ager
34. Roller steamer / Flash ager/Pressure ager/Star ager
35. Rotary screen making equipments for a textile processing unit only
36. Curing / Polymerizing Machine
37. Coating/Embossing machine
38. Sieving Machine
39. D- catizing machine
40. Relaxing machine
41. Compacting machine
42. Sueding / peach finishing / brushing / raising / contipress / pile cutting machine
43. Friction / Shriener calendar / Ordinary calendar (minimum 3 bowls)
44. Microwave dryer / Hot air dryer / In-frared dryer
45. Pleating/Creasing/Folding machine for fabrics
46. Pinching and Flat embossed machine for fabrics
47. Crush machine for uneven pleat for grey/dyed fabrics
48. Dipping unit
49. Milling machine
50. Crabbing machine
51. Shearing/Polishing machine for wool and it's blends
52. Foam finishing machine
53. Multi-cylinder drying range
54. Fabric inspection machine with fault analyzer with or without report generator
55. Multi-chamber Stenter with minimum 3 chambers, with arrangement for thermal fluid gas heating
56. Thin hydro carbon vapours recovery plant for textile printing



57. Automatic packing machine
58. Water softening plant
59. De-mineralization plant
60. Biomass based gassifiers
61. Oil/gas fired boiler or fluidised Coal fired boiler with pneumatically controlled filter mechanism, electrostatic precipitator and micro dust collector
62. Husk fired / Jute waste (caddies) boiler with pneumatically controlled filter mechanism, electrostatic precipitator and micro dust collector
63. Machines and equipments for effluent treatment plant
64. Thermal fluid heater / other high temperature heating system
65. Air compressor 15 H.P. and above
66. Roll to Roll inspection and mending machine
67. Laboratory / Processing machines & Quality control equipments for a quality control lab set up in the processing unit (This will cover all type of laboratory/processing machines & quality control equipments in a textile processing units laboratory)
68. Automatic Dye Weighing and Dispensing System
69. Process house and dye Kitchen management system for whole process house
70. PLC based yarn / fabric Singeing machine with auto mixing of air & fuel for temperature and flame control with or without pre and post brushing and de-sizing unit
71. Singeing machine for tubular fabrics
72. Knit tubular mercerizing machine or bleaching cum mercerizing machine
73. Ammonia mercerizing machine for fabrics, including ammonia recovery plant
74. Fully automatic Yarn / fabric mercerizing machine with Caustic Recovery Unit
75. Knit fabric continuous bleaching plant
76. Baloon Padder
77. Open-width continuous scouring and bleaching range with microprocessor attachments and automatic chemical dosing
78. Soft package precision winding machine

79. Compact continuous dyeing and finishing machine for tapes / narrow width woven fabric
80. Open width Pad-dry and / or Pad-Steam continuous dyeing range with micro processor based energy control and water monitoring
81. Industrial washing / drying machine for garments / made ups/Industrial tumble dryers/Washers.
82. Digital / laser / len engraving / screen making system for rotary screens
83. PLC based fully automatic Rotary screen printing machine with magnetic / air flow squeegee system, on-line washing arrangement, quick change over facility, automatic design setting
84. Ink jet printing machines
85. High Speed Micro inkjet engraver with UV exposing unit
86. Continuous transfer printing machine (cylinder based) for synthetics
87. Thermosole range (For Synthetics only)
88. Loop ager with arrangement for moist and superheated steaming
89. Powder dot coating / laminating machine for fabrics
90. Continuous weight reduction machine through micro wave technique (for Polyester goods only)
91. Compressive Shrinking range
92. Airo Machine (for durable mechanical finishes)
93. Weft Straightner with electronic controls
94. Sand blast machine for denims
95. Machine for Softening/Stone wash effect on fabric/garments
96. Plasma Treatment machines
97. Continuous Pressing and Setting Machine / Super finish machine
98. Hand held spectrophotometer for shop floor color matching
99. Effluent Treatment Plant (ETP) up to secondary and / or tertiary treatment facilities
100. Reverse Osmosis, Nano Filtration, Multiple effect / stage Evaporators / Mechanical Evaporator.

101. Fabric Profile System to monitor and control the speed of Stenter machine while heat-setting/drying/finishing for process and quality improvement.
102. Fabric Centering & Spreading system
103. Automatic Fabric Straightening system for high speed ranges.
104. Monitoring System for Weight/Denier reduction process
105. On line monitoring system for treated liquid effluent quality and quantity
106. Stack monitoring system for energy conservation and emission quality
107. Mechanical foamer with Crush calendar
108. Pultrusion machine and equipment
109. Spattering machine and equipment
110. Lab scale production /processing equipment for technical textile product development
111. Calendaring machine
112. Finishing machinery for impregnating yarn or fabrics
113. Dipping machine for tyre cord / industrial fabrics / belting ducks
114. Printing machine for coated / laminated fabric
115. Ultrasonic cutting and sealing equipment
116. Heat setting machine and stretching
117. Back Coating Lines
118. Braiding machinery

## **Garments and Made ups**

1. Single/multi needle power operated industrial lockstitch sewing machine with or without trimmer over edging /seaming and banding operation
2. Blind stitch machine/Chain stitching machine
3. Power operated linking/loop making sewing machine
4. Power operated flat lock/over-lock machine
5. Zigzag flat bed sewing machine
6. Label/elastic inserting machine
7. Decorative stitching machine
8. J Stitch sewing machine
9. Edge cutting sewing machine
10. Eyelet Button hole sewing machine
11. Belt attaching machine
12. Zip attaching machine
13. Bar tacking machine
14. Hemstitch machine
15. Smocking machine / Automatic multi needle sirring machine
16. Pattern maker/grader/marker machine/laser marker
17. Power driven cloth cutting machine / laser fabric or label cutting machine / laser engraving machine
18. Band knife-cutting machine
19. Collar / cuff turning / blocking machine / pressing machine
20. Button and snap fasteners fixing machine
21. Pocket creasing and welding machine/Auto pocket making machine
22. Industrial steam iron with vacuum table and / or buck press
23. Boiler for steam press/vacuum press, Steam cabinet/Vacuum table
24. Continuous Fusing press
25. Collar contour trimmer
26. Automatic spreading & cutting table with vacuum and / or air blowing device
27. Shoulder pad-attaching machine

28. Pocket cutting machine
29. Computerized CAD / CAM / cutting machine
30. Automatic Pocket Attaching machine
31. Round knife cutting machine
32. End cutter with cloth press track
33. Cloth drilling machine
34. Collar point trimmer/Gear knotcher machine
35. High speed fully fashioned knitting machine
36. Whole garment making machine for knitted garments or power operated garment panel forming knitting machine with linking machine
37. Power driven socks and gloves knitting machine
38. Automatic thread trimming / sucking machine
39. Automatic Shirt folding machine
40. Stain/spot removing machine
41. Pearl/Beads/Stones/Glassete/Hook and Bar attaching machine
42. Quilting machine
43. Needle/metal detector machine
44. Multi head computerized embroidery machine
45. Computerized label making machine / computerized label printing machine
46. Button wrapping / shanking machine
47. Feed-off-the-arm industrial sewing machine
48. Automatic dart/pleat making machine
49. Automatic label / ply picking machine
50. Pin tucking machine
51. Single needle basting machine
52. Single needle post bed sleeve setting machine
53. Hanging production conveyor system
54. Crochet machine for laces and bands with electronic bar operation
55. String thrusting machine
56. Plastic Staple attacher
57. Sand Blasting/Brushing machine

58. Computer Color matching (machine)
59. Automatic machine for making knit shirt center pleats
60. Belt Loop attaching machine
61. Collar Heat Notcher
62. Spot Welding machine
63. Laser Color Fading / Marking / Drawing Machine
64. Laser operated Color Spraying Machine
65. RMG Curing /heat setting oven
66. Air Compressor 15 H.P. and above
67. Computerized Strap (Collar/Cuff) Flat Bed Knitting Machine
68. Cup Seamer
69. Automatic strap cutter machine with electronic feed & cutting device
70. Cup moulding machine
71. Auto reeling stitch machine
72. Automatic combines panel-joining / tape attaching machine for curtains
73. Electronic, pre-programmed, straight line lockstitch curtain pleat tacker with fully automatic curtain hook feeding device
74. Automatic Combined Panel-joining & Hemming Machine
75. Automatic Lockstitch Curtain Hemming Machine
76. Fully Automatic Combined Thread Chain stitch Ring attach/pinch pleat tacking  
M/c
77. Hydraulic combined cutting/pressing machine for processing metal curtain rings
78. Pneumatic single
79. Fully automatic fabric inspect, measure and length cutting machine
80. Fully Automatic, Programmable, Electronic vertical curtain cutting machine
81. Electronic, pre-programmed, straight line lockstitch curtain pleat tacker with fully automatic curtain hook feeding device
82. Fully Automatic drapery pinch pleater with integrated Micro flex (r) adjustable curtain hook feeder
83. Curtain feeding device for fully automatic pinch pleater
84. High performance motor driven curtain ironing table

85. Fabric Laying / Spreading machine
86. Garment washing / Dyeing machine
87. Garment drying machine
88. Garment Color Spray Cabinet
89. Trouser topper / Foam Finisher machine
90. Trouser turning machine
91. Fabric grinding machine
92. Hem Breaking Machine
93. Fagoting / Picoting machine
94. Loop making machine
95. Placketing machine
96. Programmable Single/multi needle power operated industrial lockstitch sewing machine with or without trimmer over edging /seaming and banding operation
97. Power operated flat lock/over lock machine
  - a. Four / Five thread over lock machine with or without trimmer
  - b. Five thread flat lock machine with or without trimmer
  - c. Five thread flat lock machine with seam joining device
98. Button stitch sewing machine
99. Button hole machine with locking device
100. Continuous pressing / folding machine
101. Button packer

### **Machinery for CAD / CAM and Design Studio:**

1. Latest Model Plotter / High speed Ink Jet Plotter
2. Automatic Spreading & Cutting Machine(Single ply and high ply cutters)
3. Plotter for Computerized CAD / CAM Pattern marker / Pattern grading / marker.
4. CAD / CAM Design Studio.
5. High Resolution Scanner
6. Inkjet Engraver
7. Semi/fully automatic printing machine
8. Digital Printing machine
9. Absorbing machine
10. Screen Room preparatory equipments
11. Screen Stretching Equipments
12. Auto Screen Coating Equipments
13. Exposing Equipments
14. Digital Screen Equipments
15. Digitizer

### **Testing Equipment:**

1. Loop length tester
2. Digital twist tester
3. Abrasion tester
4. Fabric checking machine
5. Pilling tester
6. Tearing strength tester
7. Stiffness tester
8. Color matching cabinet
9. Light fastness tester
10. Computer color matching system
11. Polarizing projection microscope
12. X-ray fluorescence spectrometry
13. Spectroscope and flex cam camera
14. Spectro photometer



15. Washing fastness tester

16. Computerized scanning / grading

## **Technical Textiles**

1. Coating Technology
2. Roller Coating
3. Knife Coating
4. Spray Coating
5. Foam Coating
6. Leminator
7. Plasma Coating Equipment
8. Laser Coating Equipment
9. Screen Coating Equipment
10. Transfer Printing
11. Flock Printing
12. Needle Punch Machine
13. Wet Laid
14. Melt Blown
15. Spun laid Nonwoven Technology
16. Air laid Nonwoven Technology
17. Stitch bond Nonwoven
18. Hydroentanglement Equipment
19. Thermal Bonding Equipment
20. Chemical bonding Equipment
21. Warp Knitting
22. Wet Extrusion Technology
23. Melt Spinning Technology
24. Dry Spinning Technology
25. Electro Spinning Technology
26. PH Controller
27. Temperature Controller
28. Flow Controller
29. Concentration Controller
30. Cold Plasma Technology

## **Power Plant**

1. Generating sets
2. Engine body semi assembled
3. Turbo charger
4. Engine instrument panel
5. Heat exchangers
6. Air receiver
7. Air compressor
8. HFO oil purifier
9. Lube oil purifier
10. Generator accessories

**Information Technology**

**Enterprise Resource Planning System**