Grant for Indigenous manufacturing of Machinery/Tools/Equipment/Testing Instruments for Technical Textiles

Proud to be a part of
MAKE IN INDIA

Create, Design, Analyze, Simulate

Prototype and Make Innovative Machine

National Technical Textiles Mission
Ministry of Textiles
General Guidelines for submission of Research proposals under Component-I (Research, Innovation and Development) and Terms of Funding for Design, Development and Manufacturing of Machinery/Tools/Equipment/Testing Instruments for Technical Textiles

National Technical Textiles Mission
Ministry of Textiles
1.0 Introduction

India, although placed at 5th position in terms of market size of Technical Textiles in the world, it has not ventured concurrently into production of capital machines required for manufacturing and processing activities. We still depend on imports of machineries and plants for manufacturing Technical Textiles and thereby affecting production costs, especially for high-end products.

One of the key initiatives of Ministry of Textiles under National Technical Textiles Mission (NTTM) is to support development of high-end machinery, equipments, tools, and testing instruments for Technical Textiles in India and establish an indigenous platform for domestic design, development, and manufacturing. The initiative is launched as a part of "Make in India" programme to promote technological independence and support innovation in the production of machinery, equipments, tools, and testing instruments for Indian technical textiles sector. In order to develop indigenous R&D capabilities; improve the cost of Technical Textile production; move toward self-sufficiency and increase India’s exports; the Ministry intends to collaborate with recognized R&D leaders, machinery manufacturers and industry players in technical textiles.

Research and academic institutions shall work in tandem with the Ministry and machine manufacturers to conduct cutting-edge R&D with a team of highly qualified academicians and researchers. The manufacturers shall serve as the key partners for machine design, development, manufacture and execution, bringing extensive industry knowledge and a wide range of value propositions, in turn opening the door for creation of high-skilled employment prospects for the sector.

Development of state-of-the-art indigenous technical textile machinery would support and enhance the manufacturing capabilities of high-end technological products, and thus would play an instrumental role in driving India’s Technology Readiness Level in technical textiles. With such focused government support, India can envision to become a global player in producing technical textiles machinery, manufacturing at scale with quality and quantity the machinery of choice that the world requires.

2.0 Eligible Organizations

The eligible organization¹ may include following bodies:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Eligible Organization</th>
<th>Details of Eligible Organization</th>
<th>Mandation of Project Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Machinery Manufacturers</td>
<td>Company engaged in manufacturing of any kind of machinery (preferably Textile machinery) having</td>
<td>Not mandatory.</td>
</tr>
</tbody>
</table>

¹ also referred as Project Implementing Organization (PIO) in the subsequent part of this document
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>design, simulation and fabrication facilities. It must be incorporated under the Companies Act 2013 and registered with Ministry of Corporate Affairs (MCA).</td>
<td>However, may involve (b) or (c) as Project Partner(s)</td>
</tr>
<tr>
<td>b)</td>
<td><strong>Textile / Garment Value Chain Manufacturers</strong> (eg. Spinning unit / Weaving units / Processing units / Integrated Textile units, etc.)</td>
<td>Company engaged in textiles / garment manufacturing value chain. It must be incorporated under the Companies Act 2013 and registered with Ministry of Corporate Affairs (MCA).</td>
</tr>
<tr>
<td></td>
<td><strong>Mandatory.</strong> Shall involve (a) and if required (c) as Project Partner(s)</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td><strong>Research Organizations / Academic Institutes</strong></td>
<td>c1) Research Organizations directly under the control of a Ministry / Department of Government of India or a public Academic institution of repute engaged in advanced research. c2) Private educational Institutions/ Research bodies/Universities</td>
</tr>
<tr>
<td></td>
<td><strong>Mandatory.</strong> Shall involve (a) and if required (b) as Project Partner(s)</td>
<td></td>
</tr>
</tbody>
</table>

- Possible Industries: Textile Machine manufacturers such as ATE, KTTM, LMW, CMTI and many Textile machine manufacturers in Ahmedabad, Surat, Ludhiana, Coimbatore, and other places in India, to be identified by the Research Organizations / Academic Institutes to include them as Industry Partner(s).

- ITTA members may be involved in specific Technical Textiles’ machine manufacturing for receiving suggestions to improve machine/equipment manufacturing needs.

- Possible Research Organizations / Academic Institutes: (i) All IITs, NITs, Govt. Universities and Colleges, (ii) NID, (iii) DRDO Labs, (iv) TRAs, (v) Textiles Committee (For Testing Instruments development).

*The details of Project Partners have to be brought out in the Development Proposal with details of their specific roles in the Development Proposal.*
3.0 Eligible Machinery and Testing Equipment for Funding

High-tech machinery, equipment, processing plants, tools and accessories, and testing and research equipment not manufactured in India at present for the Technical Textiles sector including new ones but not limited to the indicative list enclosed in Annexure-II, shall be eligible for funding assistance under National Technical Textiles Mission (Component-I).

4.0 General Guidelines

• Funding shall be provided to the PIO (refer section 2.0). PIO conducting the particular research project shall be primarily responsible for inter-partnership coordination, distribution of funds, monitoring of expenditure and reporting progress to the Government. PIO shall also be responsible for the final desired outcome in the time bound manner.

• Each Project shall have maximum three Stages (including the final outcome stage) namely: (i) Conceptual Design and Simulation, (ii) Prototype Development, Demonstration and Validation, (iii) Pilot Manufacturing and Commercialization, towards achievement of its 'Desired Outcome' and Make In India campaign. The Desired Outcome must be in clearly identifiable terms, which has a potential for commercial use.

• The Development Proposal must indicate all such serial and parallel activities; and also indicate activities to be performed by the PIO and its Project Partner in colour code in the PERT diagram. The timeline for each activity leading to a Milestone and the Stage (a Stage means achievement of a measurable and definable outcome prior to the Desired Outcome) also needs to be defined in the Development Proposal.

• The funding provided under National Technical Textiles Mission (Component-I) shall not cover any cost towards additional infrastructure such as building or any renovation work. Funds will not be given for meeting the cost of land and building. No funding shall be provided for upgradation of old machines. However, funding will be considered for making new machines working on well-known and proven principles.

• The research activities have to be undertaken within the available infrastructure arrangement of each participating organization. However, research/fabrication equipment which are additionally required for specific jobs not available earlier may be procured by the PIO, the details of which needs to be clearly indicated in the Development Proposal submitted for consideration of the Government.

• Cost incurred towards permanent manpower should not be charged to the cost of research. However, cost of additional temporary manpower (contract employee, consultants) proposed to be engaged for the Research Project may be indicated
clearly in the Development Proposal, with details of man-days and cost per man-day in respect of each such engagement.

- All the research equipment, additional contract manpower/consultants, procurement of research materials shall be purchased/hired keeping in view the relevant instructions of GFR 2017, Terms and Conditions of the MoU signed with the Ministry for the Project and the guidelines issued by the NITI Aayog. PIO shall procure these equipments in order to promote *Make in India* and enable competitiveness of the industry by way of reduced capital costs.

- The PIO shall not dispose of or lease out or create any charge over the assets created by utilizing the assistance provided, without written permission from the Ministry.

- Each Research Project shall be reviewed periodically not exceeding once in every six months to monitor progress, vis-a-vis its defined Milestones and Stages. Further funding shall depend upon satisfactory progress of the Research Project in terms of the approved plan.

- National Technical Textiles Mission aims at research in hi-tech areas of technology for boosting manufacture of cutting edge indigenous machinery, equipments and testing instruments for technical textiles and related materials. All research projects have to be original in nature addressing an advanced area having wider benefit to the country. The PIO and its Project Partner(s) for the Research Project are responsible for the protection of research confidentiality.

- The National Technical Textiles Mission will be in operation till 31st March 2024, after which it will move into the sunset phase. So the Development Proposals must be submitted keeping in mind the target years of the Mission.

### 5.0 Application Procedure

- Development Proposal Application as per the format in Annexure-I containing the details relating to the targeted technology, present value of imports, prospective buyers of the targeted technology, machinery, prospective IPRs, etc., may be submitted in hard copy with authorized signature and seal of the PIO to:

  **Mission Director (Research & Innovation)**  
  **Mission Directorate, National Technical Textiles Mission**  
  **Ministry of Textiles, Govt. of India, New Delhi.**

- In addition, a scanned copy of the Development Proposal Application must be sent at nttm-textiles@nic.in with a copy marked to mahendra.grv@gov.in & m.ksinha@nic.in. The Development Proposal Application shall be processed based on the version sent on email, however, the original signed hard copy must be made available to the Ministry of Textiles/Mission Directorate within 30 days of the submitted email, failing which the application shall be liable to rejection/disqualification.
- An application completed in all respects will only be treated as an eligible application, including submission of additional information asked by the Mission Directorate.
- The Ministry will endeavour to plan, design and implement an online system to receive proposals, approve and monitor progress of research proposals under the scheme.
- The Mission Steering Group (MSG), under the chairmanship of Hon'ble Minister of Textiles, constituted as per the Institutional Mechanism of the National Technical Textiles Mission (NTTM), shall be the final deciding authority with regard to the quantum and type of funding assistance as well as any modification to the criteria as laid down in this document.

6.0 Evaluation Process and Implementation

- The Development Proposal shall be approved as per the Institutional Mechanism under National Technical Textiles Mission, Ministry of Textiles notified in the Gazette of India..
- The eligible proposals received by Ministry shall be screened by the Mission Directorate. The Mission Directorate shall conduct a 1st level scrutiny/assessment of Development Proposals.
- The second stage detailed examination of the submitted proposals shall be carried out by Sub-Committee on Technical Textiles notified by Ministry of Textiles as amended from time to time. The Sub-Committee can add special invitees/subject experts and co-opted members as deemed fit, and as per the direction of the Chairperson of the Sub-Committee.
- The PIO submitting the Development Proposal and its Project Partners may be required to present the proposal before the Sub-Committee / RDI Committee on Technical Textiles at the time of its consideration.
- Upon recommendation of the Sub-Committee and RDI Committee, the Mission Directorate shall submit the proposal to the Mission Steering Group (MSG) for final stage approval.
- Upon approval granted by MSG, the MoU shall be signed amongst the Selected Organization, Project Partner and Ministry. The MoU shall specify terms and conditions of funding by the Ministry.
- The Selected organization shall submit relevant documents/Progress reports/Deliverables to Ministry for progress appraisal like Utilization Certificate, Project Reports, among others.
- For each project approved, Mission Directorate shall review the progress of the project at fixed intervals.
• The funding shall be subject to approval of the Mission Steering Group constituted under the scheme.

• The PIO shall not change the form or the basic objectives/outputs/outcomes of the approved proposal, without prior approval of Ministry. The objectives/output/outcomes of the assisted project indicating its objects shall not be amended without recommendation of Committee(s) and further written permission from the Ministry.

• The PIO shall mandatorily organise the final meeting with Mission Directorate before reporting project completion to Ministry. On-site physical verification of the project is mandatory to be conducted by the Mission Directorate.

• The PIO shall submit a Project Completion Report (Technical, Physical and Financial) (both hard copy and soft copy) to the Mission Directorate along with the minutes of the final meeting with Mission Directorate recommending completion/closure. The Project Completion Report shall also consist of detailed designs, drawings, specifications, calculations, flow-charts, sequences of manufacturing, and documents relating to the Technical Know-How of the technology/machinery developed.

• The Ministry shall grant the Certificate of Project Completion to the PIO after satisfactory evaluation of the Project Completion Report.

• The outlay approved for development of Machinery/Plant/Equipment cannot be exceeded without specific approval of the Mission Steering Group and communication from Ministry of Textiles in this regard thereof.
Figure 1: Process Flow

**Stage I: Project Initiation**

- **START**
  - Project Implementing Organization (PIO) submit their Research Projects to Mission Directorate, NTTM as per the guidelines OM F.No … dated … 2022
  - Proposal submitted to Mission Directorate, NTTM for 1st level assessment
  - Details of PI/Project Lead, Timeline, Cost/Budget, Means of finance
  - Product partners, Progress Chart, Prospects of commercialization, Proposed IP rights
  - Contribution to the sector, Impact on Economy

**Stage II: Project Assessment & Approval**

- **Accept**
  - PIO make suggested changes and resubmit proposals to Mission Directorate

- **Resubmit**

- **Reject**

- Post clearance by the Sub-Committee and RD&I Committee, Mission Directorate submit the proposals to the Mission Steering Group (MSG) for final stage approval

- **Accept**

- **Reject**

**Stage III: Project Progress and Execution**

- MoU signed between Ministry of Textiles and Selected PIO
- Initial/1st Installment of funding is released to the PIO in line with funding pattern
- PIO submit relevant documents including APBG/Progress reports/Deliverables to MoT for progress appraisal like utilization certificate, project reports, among others
- Similarly other installments are made with approval of milestones & deliverables by performing physical inspections & samples checking by the Ministry of Textiles
- Final payments released and Research Project is closed
7.0 Funding Arrangement

- The project cost will be jointly funded by the Ministry of Textiles and the PIO or the Project Partner (in case where PIO is Research Organization / Academic Institute). The Overall ratio of Ministry funding and PIO contribution will be in the ratio of 80 (maximum) : 20 (minimum).

- Of the total project cost, Ministry contribution will be limited to a maximum of up to 80%, and the rest will be contributed by the PIO/Project Partner (in case PIO is Research Organization/Academic Institute).

- For the purpose of payment to the selected PIO (excluding Government Organization/Institute), submission of Advance Payment Bank Guarantee (APBG) by the PIO (excluding Government Organization/Institute), is to be considered.

- An Advance Payment Bank Guarantee (APBG) of 20% value of the total project cost including taxes and duties, subject to correction and acceptability of the documents submitted, would be furnished by the selected PIO (excluding Government Organization/Institute), in the form of a Bank Guarantee to sequentially act as Advance Payment Bank guarantee till the achievement of all approved milestones under the application of the current guideline. The APBG shall be submitted by the selected PIO (excluding Government Organization/Institute), within one month of signing of the Contract/MoU with the Ministry of Textiles and shall be valid for a period, until 6 months beyond the period of the final milestone under the guideline.

- Fund disbursement shall be in progressive manner to the PIO after signing of the MoU and receiving confirmation of contribution made by the PIO/Project Partner (in case where PIO is Research Organization/Academic Institute) in the designated Union Bank of India (UBI) savings account. Release of fund will be subject to the fulfillment of terms and conditions as approved by the Committee, Gazette Notification and the relevant Government Orders/ General Financial Rules 2017.

- For subsequent installments, the PIO shall first deposit and confirm contribution in the designated UBI Saving Bank Account for the Project to Ministry before the fund is disbursed from Ministry. Release of subsequent installments shall be subject to satisfactory utilization of the funds and completion of defined milestones and outcomes/ outputs as per target, and recommendations of the MSG.

- Funding pattern shall be as follows:
- For category (c1), Public funded Institutions and Organisations:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Installment</th>
<th>Milestone</th>
<th>Ministry Funding</th>
<th>PIO / Project Partner Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; installment</td>
<td>After Stage-I achievement of the Research Project and approval thereof</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>2.</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; installment</td>
<td>After Stage-II achievement and approval thereof and utilization of 100% of 1&lt;sup&gt;st&lt;/sup&gt; installment</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>3.</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; installment</td>
<td>Final release of funds after achievement of the Desired Outcome and utilization of 100% funds of 1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; installment released</td>
<td>30%</td>
<td>-</td>
</tr>
</tbody>
</table>

- For category (a), (b) & (c2), Private Companies/Organisations /Institutions

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Installment</th>
<th>Milestone</th>
<th>Ministry Funding</th>
<th>PIO / Project Partner Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; installment</td>
<td>After Stage-I achievement of the Research Project and approval thereof</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>2.</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; installment</td>
<td>After Stage-II achievement and approval thereof and utilization of 100% of 1&lt;sup&gt;st&lt;/sup&gt; installment</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>3.</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; installment</td>
<td>Final release of funds after achievement of the Desired Outcome and utilization of 100% funds of 1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; installment released</td>
<td>20%</td>
<td>20%</td>
</tr>
</tbody>
</table>
• Ministry fund will be released in four installments. The utilization of fund will be subject to and in compliance of terms and conditions as approved by the Committee. The PIO shall submit the documents as per the check list enclosed (Annexure –III) including Advance Payment Bank Guarantee at the time of release of each installment of Ministry funding.

• The accounts of the PIO shall be audited every year and the PIO shall be required to submit annual financial statements to Ministry at the end of each financial year.

• The PIO shall be required to maintain a fixed assets register of equipment/assets procured by utilizing funds for verification by Ministry at any time.

• In case of failure to utilize the sanctioned funds within time or its misuse, misappropriation or diversion or violation of any one or more of the conditions mentioned above, the Government will be entitled to recover the entire assistance amount with interest, in addition to taking such other legal action, as necessary as per GFR/Govt. orders.

• The Ministry may also prescribe such other conditions, as necessary, before sanction/release of assistance.

8.0 Intellectual Property

The ownership of IPR generated during the development of the technology shall vest jointly in the PIO, Project Partner and Ministry.

• The IP/technology developed shall not be transferred to any third party from date of completion of technology development for the period which may vary from three to five years as mentioned in the MoU for the sanctioned project.

• The technology shall be exclusively used by the PIO/Project partner (in case where PIO is Research Organization / Academic Institute) for commercialization and further technological upgradation.

• Responsibility of commercialization of technology developed rests with PIO / Project partner (in case where PIO is Research Organization / Academic Institute). However, Ministry will facilitate and provide all possible assistance excluding financial support for commercialization of developed technology.

• PIO, Project partner and Ministry shall retain perpetual right and royalty free, non-exclusive license of the IP to use throughout the project after the lock in period as mentioned in the MoU or till the expiry of IP rights as per law. The PIO/ Project partner (in case PIO is Research Organization/Academic Institute) may use the technical know-how for research purposes, however, shall not share the technical know-how, details and design of the technology so developed with any third party within the lock in period.
To realize the aim of dissemination of newly developed technologies to Technical Textile Industry, PIO/ Project partner (in case PIO is Research Organization/Academic Institute) shall act as the custodian of the IP rights on behalf of Ministry and shall be able to transfer them to any third party after the lock in period, with the consent of Ministry.

****
Annexure I: Application Format

1. Details of Project Implementing Organization (PIO)
   - *Textile/garment value chain unit or Machinery manufacturer* {Refer section 2.0 Eligible Organizations point (a) & (b)}
     (A) Name of the PIO with address, location, field of operation (as per Memorandum of Association-MOA) and other details
     (B) Registration details of the company
     (C) Current Manufacturing activities and/or Research infrastructure
     (D) Date of Starting operation
     (E) Annual turnover for the last 3 years
     (F) Strength of Personnel in the Applicant Unit/company
     (G) Name/ Designation of the Lead Person for the Project
   - *Research Organization / Academic Institute* {Refer section 2.0 Eligible Organizations point (c)}
     (A) Name of the PIO with address, location and other details:
     (B) Administrative Ministry/ Department of GoI:
     (C) Head of Research Project with: -
       (i) Name:
       (ii) Designation:
       (iii) E-mail ID:
       (iv) Contact Number (Mobile No. preferred):
         (*The Head of the Research project should not be below Scientist ‘C’ under Gol or Assistant Professor of Academic Institute of repute*)

2. Details of Project Partner(s)
   (A) Name of the PIO with address, location, field of operation (as per Memorandum of Association-MOA) and other details
   (B) Registration details of the company
   (C) Current Manufacturing activities and/or Research infrastructure
   (D) Date of Starting operation
   (E) Annual turnover for the last 3 years
(F) Strength of Personnel in the Applicant Unit/company

(G) Name/Designation of the Lead Person for the Project

(Add more Project Partners as B, C, D, etc.)

3. Name of the Research Project

4. Objective of the Development Proposal and Abstract (note more than 500 words): May include introduction with current gaps identified, project objective for development of new technology, methodology, timelines for development, trial & validation and contribution of this new machinery/equipment (technology) to Technical Textiles sector may be submitted, along with detailed DPR.

5. Project Details

(A) Project Methodology

(B) Project Implementation Plan with Milestones and Stages

(C) Role of each Partner

(D) Desired Outcome

6. Details of present capacity of the PIO to take up new technological development based on this Project.

7. Total cost (in detail) and duration of the Project: May include equipment required for implementation of this project with justification, brief specification and item-wise cost additional research equipment, additional contract manpower/consultants, procurement of research materials.

8. Details of available Research and Test Equipment required in connection with the Project (in respect of PIO, each partner)

9. Status of availability of land and building for the project

10. Means of finance

11. Details of the financial contribution of the Project Partner(s)

12. PERT/Progress Chart (colour coded to indicate role of individual partners in case of Project Partner involvements with Stages and Outcomes.

13. Prospects of commercialization of the new machinery/equipment (technology)/Technical know-how

14. Projected market demand for the machinery/equipment planned to be developed

15. Cost comparison with any relevant machinery/equipment currently being imported

16. Proposed IP rights to protect developed machinery/equipment (technology)
17. Related R & D, Science & Technology work, if any being undertaken by other(s) in India

18. How the final outcome will benefit the society / economy (in quantifiable terms as much as possible).
Annexure II: Indicative list of Technical Textiles Machineries & Equipment for Funding

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Segment</th>
<th>Machine/Equipment details</th>
</tr>
</thead>
</table>
| 1.    | Fibre Production machineries | 1. Aramid fibre production machinery  
2. Carbon fibre production machinery  
3. UHMWPE fibre production machinery  
4. Nylon 6,6 fibre production machinery  
5. Polypropylene fibre production machinery  
6. PBO/PBI fibre production machinery  
7. Fire resistant Polyester / Nylon fibre production machinery  
8. Inherently fire proof Melamine based fibre (Basofil)  
9. Glass fibre production machinery  
10. Machinery for production of any other high performance fibre |
| 2.    | Spinning machineries         | 1. Core spinning machine  
2. Friction spinning machine  
3. Doubling /twisting /cabling machine for industrial yarn |
| 3.    | Weaving Preparatory machineries | 1. Filament winding machine for technical textile yarns  
2. High speed computerized warping / sectional warping machine |
| 4.    | Weaving Machineries          | 1. Heavy duty tape weaving  
2. Bi-axial and Multi-axial weaving machinery  
3. Heavy duty shuttleless weaving machine  
4. 3D weaving machine  
5. Narrow fabric weaving  
6. Special looms for Glass yarn weaving  
7. Circular Looms  
8. Leno fabric weaving  
9. Computer aided Design for weaving  
10. Tri-axial fabric weaving machine |
| 5.    | Knitting Machineries         | 1. Warp Knitting machine  
2. Circular Knitting machine |
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.</strong></td>
<td>Knitting machine for spacer fabrics</td>
<td><strong>4.</strong> Bi-axial and Multi axial knitting machine</td>
</tr>
<tr>
<td><strong>5.</strong></td>
<td>Tricot machinery</td>
<td><strong>6.</strong> Circular knitting machine for sacks</td>
</tr>
<tr>
<td><strong>7.</strong></td>
<td>Rachel machine for netting</td>
<td><strong>8.</strong> Net making machine by warp knitting machine</td>
</tr>
<tr>
<td><strong>9.</strong></td>
<td>Hose / Tube knitting machine</td>
<td></td>
</tr>
<tr>
<td><strong>6.</strong></td>
<td>Non-Woven Machineries</td>
<td></td>
</tr>
<tr>
<td><strong>1.</strong></td>
<td>Needle looms</td>
<td><strong>2.</strong> Spun bonding</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>Thermal bonding</td>
<td><strong>4.</strong> Melt blown technology</td>
</tr>
<tr>
<td><strong>5.</strong></td>
<td>Needle punching machine</td>
<td><strong>6.</strong> Air laid web formation</td>
</tr>
<tr>
<td><strong>7.</strong></td>
<td>Hydroentanglement or “Spunlace” non-woven Technology</td>
<td><strong>8.</strong> Needleless Electrospinning Technology</td>
</tr>
<tr>
<td><strong>9.</strong></td>
<td>Bi-Component Fibre spinning</td>
<td></td>
</tr>
<tr>
<td><strong>7.</strong></td>
<td>Braiding</td>
<td></td>
</tr>
<tr>
<td><strong>8.</strong></td>
<td>Processing Machines</td>
<td></td>
</tr>
<tr>
<td><strong>1.</strong></td>
<td>Calendering machine</td>
<td><strong>2.</strong> Mechanical foamer with calender</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>Coating and Lamination machine</td>
<td><strong>4.</strong> FRP processing machine</td>
</tr>
<tr>
<td><strong>5.</strong></td>
<td>Finishing machinery for impregnating yam or fabrics</td>
<td><strong>6.</strong> Dipping machine for tyre cord / industrial fabrics / belting fabrics</td>
</tr>
<tr>
<td><strong>7.</strong></td>
<td>Dryer, Heat setting and stretching machine</td>
<td><strong>8.</strong> Printing machinery for technical textiles</td>
</tr>
<tr>
<td><strong>9.</strong></td>
<td>Continuous Bleach range machine</td>
<td><strong>10.</strong> Continuous dye range machine</td>
</tr>
<tr>
<td><strong>11.</strong></td>
<td>Air Flow Dyeing Machine</td>
<td><strong>12.</strong> Automated Yarn Dyeing Machine</td>
</tr>
</tbody>
</table>
9. **Machinery / Equipment for processing Technical Textiles**
   1. RF (Radio Frequency) welding equipment
   2. Ultrasonic cutting and sealing equipment
   3. Laser cutting and sealing equipment
   4. Printing equipment for Signage
   5. Back Coating Lines
   6. Machinery for manufacture of clay liner
   7. Machinery for manufacture of prefabricated vertical drains

10. **Machinery for Geotextiles**
    1. Continuous coated and laminated plant
    2. Wet fiber Spinning Machine
    3. Melt fiber Extrusion system
    4. RTM (Resin Transfer Moulding)
    5. Dry Jet Wet Spinning technology
    6. IR Sealing machine
    7. Thermo bounded Sealing Machine
    8. Ultrasonic lace sewing

11. **Testing Equipment/Instruments**
    1. Honest meter static charge
    2. Clothing Evaluation System
    3. Mannequin - Test facility for dynamic evaluation
    4. Dual Cone Calorimeter
    5. Accelerated Weathering Tester
    6. Thermal Protective Performance (RPP test device)
    7. Laundero-meter
    8. Digital Air-permeability tester
    9. Computer Color Matching
    10. Moisture Management tester
    11. Sweating guarded hot plate
    12. Environmental Test Chamber
    13. Any other relevant Equipment/Instrument

*Note: Above is indicative list only, other relevant machinery/equipment may be added as per the requirement.*
Annexure III: Check list of documents to be deposited for release of Ministry funding

(i) Copy of Memorandum of Association-MOA (in case of manufacturing unit)

(ii) Acceptance letter by the PIO

(iii) Utilization Certificate as per Rule 86(6) of General Financial Rules 2017 (not required in case of first installment);

(iv) Progress reports against Milestones defined in the MoU (not required for first installment);

(v) Advance Payment Bank Guarantee

(to add more requisites)