

INVITATION TO TENDER (ITT) INSTRUCTIONS

Design and Development of Low Cost Carding
Machine for Namdah Weavers in Tonk, Rajasthan

Foundation for MSME Clusters, New Delhi

9/19/2017

INVITATION TO TENDER (ITT) INSTRUCTIONS

Introduction

1. This Invitation to Tender (ITT) and (in particular) the *Instructions for Compiling and Submitting Your Tender* are designed to help you produce a tender that is acceptable to Foundation for MSME Clusters (**FMC**) for the Project “Design and Development Low Cost Carding Machine for Namdah Weavers of Tonk, Rajasthan”. The Project is funded by SEED Division, Department of Science and Technology, Ministry of Science and Technology, Government of India.

To ensure that tenders are given equal consideration and can be objectively evaluated, it is essential, therefore, that you provide the information requested in the specific format.

The instructions should be read in conjunction with information specific to the Project contained in the covering letter and in the documents that follow.

Instructions for Submitting Tender

2. Format of Tender

The tender should be submitted in three main parts:

- Part A: Executive Summary
- Part B: General and Technical Tender
- Part C: Commercial Tender

Part A and Part B should be bound together. Part C must be bound separately. This will enable technical and commercial tenders to be evaluated independently. **Do not include any price information in Parts A and B; else your tender will be disqualified.**

No publicity material is required.

Parts A and B should not be of more than 8 pages (font Arial, size 12, line spacing 1.25) excluding CVs and Annexes.

3. Part A: Executive Summary

This should be a brief overview of your tender covering how you intend to achieve the

outputs and your assessment of the resources required.

No financial data is to be mentioned in Part A.

4. Part B –General and Technical Tender

Your General and Technical Tender should be structured in 5 sections:

- Section 1 Technical Response (including methodology for development 1:1 prototype of carding machine and successful test of the technology in the cluster)
- Section 2 Previous experiences of the organization in similar activities
- Section 3 Personnel Inputs – personnel to be involved, their person days and status of employment (e.g. employed with the Tenderer/self employed/employed with other employer but has permission to work for this Project) without any reference to fees
- Section 4 Names & CVs of personnel to work on this project and their relevant experience following the Evaluation Criteria
- Section 5 Matters not appropriate in any other appendix, e.g. Disclosures, Conflict of Interest

No financial data is to be mentioned in Part B

5. Part C – Commercial Tender

All prices mentioned should be for the duration of the Contract. Your Commercial Tender should be structured in four Sections.

- Section 1 Confirmation of acceptance of FMC Conditions of Contract
- Section 2 Pricing, using a fees and expenses basis (using Proforma 1 and 2 attached).
- Section 3 List names, designation (for this Project) and HR cost of all nominated personnel proposed to work on this Project

6. Nominated Personnel

You must:

Confirm that all personnel will be available to provide the required services for the duration of the Contract

Give the name of their employer or state if self-employed, if any of the personnel is not a member of the Tenderer's staff.

7. Government Tax

Tenderers are responsible for establishing the status of the Services for the purpose of any government tax. Any applicable taxes should be shown in commercial proposal. Bidders are requested to provide GST number.

8. Alterations to Tenders

Any manuscript or other alteration to the tender must be countersigned and dated by the person submitting the tender. The Tenderer must not alter the ITT documents.

9. Letters and Declaration to Accompany Tenders

Your tender must be accompanied by a letter on your organization letter head paper showing the full registered and trading name(s), trading and registered office address, and, in the case of a Company, the place of incorporation. It should be signed by a person of suitable authority to commit the Tenderer to a binding Contract. You must quote the Contract Title, Contract Number and include the following declarations:

- We have examined the information provided in your Invitation to Tender (ITT) and offer to undertake the work described in accordance with requirements as set out in the ITT. This tender is valid for acceptance for 45 days since the date of tender issue and we confirm that this tender will remain binding upon us and may be accepted by you at any time before this expiry date.
- We understand the obligations of points 12 and 13 of ITT and have included all necessary declarations in Part B of the Tender.
- We confirm that all personnel named in the tender will be available to undertake the services.
- We agree to bear all costs incurred by us in connection with the preparation and submission of this Tender and to bear any further pre-contract costs.
- I confirm that I have the authority of [name of organisation] to submit tenders and to clarify any details on its behalf.

10. Packaging and Delivery of Tenders

Tenders must be delivered in a double sealed envelope clearly labeled with the following:

- a) Contract Title
- b) Contract Reference Number
- c) Tender Due Date
- d) Tenderer's Name

It should be addressed to the Contract Officer at the address Dr. Tamal Sarkar, Director, Foundation for MSME Clusters (**FMC**), USO Road, New Delhi in the covering letter and sent **latest by 1700 hours, Indian Standard time, on the 10th October 2017**. FMC accepts no responsibility for the premature opening of any incorrectly marked tender.

The Technical bid and the commercial bid should be put and sealed in two separate envelopes and the two separate envelopes must be put in a single sealed envelope.

The Technical Bids will be opened on 16th **October, 2017 at 1200 hours** at same address as mentioned in 11.2.

The Commercial Bids will be opened on 16th **October, 2017 at 1500 hours** at the same address as mentioned in 11.2.

Bidders are invited to attend both tender openings at their own cost.

Purchase Committee will open the bids on the prescribed date and time even if none of the bidders are present.

If there is any change in dates of the bid opening FMC will inform all the bidders as soon as possible.

Late tenders will not be accepted under any circumstance and will be returned unopened to the bidder with a suitable advisory. No special pleadings will be accepted.

Faxed or e-mailed tenders will not be accepted.

10% of Total Project Value as Bank Guarantee needs to be deposited to FMC, New Delhi on signing of the MoU. This amount will be adjusted/returned on completion of the Project.

Other Information

11. Conflict of Interest

Tenderer must disclose in their Tender details of any circumstances, including personal, financial and business activities that will, or might, give rise to a conflict of interest. Purchase Committee reserves the right to reject any Tender which, in opinion of Purchase Committee, gives rise, or could potentially give rise to, a conflict of interest.

12. Disclosures

Tenderer must disclose that

Neither them, nor any of their proposed Project personnel or any consultant of theirs have been convicted of any criminal offence or any serious offence involving the activities of a criminal organization or found by any regulator or professional body to have committed professional misconduct.

That they do not have any proceedings or other arrangements relating to bankruptcy, insolvency or financial standing, including but not limited to the appointment of any officer such as a receiver in relation to their personal or business matters or an arrangement with creditors or of any other similar proceedings.

That they have never failed to fulfill any obligation in any jurisdiction relating to the payment of taxes or social security contributions.

If case any of the above (13.1, 13.2 and 13.3) is true, the Tenderer must disclose the same in the tender document in details and Purchase Committee reserves the right to reject any Tender which, which in opinion of FMC & TIT&S, is not suiting the spirit of the Principal Project - "Design and Development Low Carding Machine for Namdah Weavers, Tonk".

In case none of the above (13.1, 13.2 and 13.3) is true, the Tenderer must give a statement reading "Disclosures: None".

13. No joint venture is allowed.

14. Treatment of Your Tender by FMC

FMC is committed to ensuring Value for Money* in procurements. Therefore, when you submit a tender, we will

Ensure tenders are registered upon receipt and held securely until after the deadline for receipt of tenders.

Witness the opening of all tenders after the time and deadline for receipt of tenders and separately register the commercial details of each tender.

Return, unopened, any tenders received after the deadline of receipt of tenders.

Disqualify any non-compliant tenders (i.e. tenders failing to meet the terms of these instructions, including items mentioned in point 12 and 13) received. The commercial details of such tenders will be recorded and marked as disqualified.

Ensure that all tenders are evaluated objectively, in line with the evaluation criteria specified.

Following evaluation, inform the Tenderers by 16th October 2017.

** Value for money is defined as the optimum combination of cost and quality to meet the requirements*

Proforma for Commercial Proposal

(Proforma 2)

CONTRACT FOR: Design and Development of Low Cost Carding Machine for Namdah Weavers Tonk, Rajasthan

(A) Machinery and Equipment Cost

NAME of Machinery/ Equipment	Detail/Purpose	No of Unit	Cost/Unit (Inclusive of GST) in Rs	Total Cost (Inclusive of GST) in Rs
Add more rows, if required				
Total (A)				

(B) STAFF INPUTS AND FEE RATES

NAME	DESCRIPTION	No of DAYS	DAILY FEE RATE (Rs.)	Total Fees (No of days X rate) in Rs.
Add more rows, if required				
Total (A)				

(c)Travel and Miscellaneous Costs

These costs should be shown separately in the format set out below using separate sheets to provide full details under each heading. Unit prices should be quoted for such items as air (economy)/train (AC-2T) fares (stating the class of fare envisaged), subsistence and local transport.

	No.	CLASS	RATE	COST (Rs)
FARES				
Local Travel				
SUBSISTENCE person/days				
ACCOMMODATION person/days				
ANY OTHER (Specify)				
TOTAL PROJECTED Travel and Miscellaneous COSTS: (C) Rs				

1. Total projected contract cost (without GST): (A) + (B)+(C): Rs
2. Applicable GST: Rs
3. Total projected contract cost (with applicable GST):

Section 1: MODEL CONTRACT

CONTRACT FOR: Design and Development of Low Cost Carding Machine for Namdah Weavers Tonk, Rajasthan

CONTRACT NO:

This Contract (hereinafter referred to as the Contract) dated _____, 2017 is made between:

FMC, 2nd Floor, USO House, USO Road, Off Saheed Jeet Singh Marg, New Delhi-67
(hereinafter referred to as CLIENT),

and

_____ (hereinafter referred to as the
SUBCONTRACTING AGENCY)

Whereas:

- the CLIENT may require the Sub-Contracting agency to supply certain services under the terms of the Contract, and as more particularly defined in the Contract Letter (hereinafter referred to as the Services) which shall be placed pursuant to the Contract (see Section 3),
and
- the Sub-Contracting agency having represented to the CLIENT that they have the professional skills, personnel and technical resources, have agreed to supply the services when required during the period of the Contract

It is hereby agreed as follows:

1. Documents

The Contract shall comprise of the following documents:

Section 1	Form of Contract (this document)
Section 2	Conditions of Sub-Contracting
Section 3	Terms of Reference
Section 4	Special Conditions
Section 5	Schedule of Prices

2. Previous Communications

This document constitutes the entire Contract between the parties and supersedes all previous communications, whether oral or written, in relation to the Services to be undertaken in accordance with the Contract.

3. Provision of Services

The Sub-Contracting agency agrees, during the period of the Contract, to make themselves available, to provide the Services to be undertaken in accordance with the Contract. The Sub-Contracting agency is required to pass to the client within one month of completion of task, all documents and working papers accumulated during the course of the Services.

4. Payment

In consideration of the Services performed by the Sub-Contracting agency under the terms of this Contract, the CLIENT shall make to the Sub-Contracting agency such payments and in such manner as provided in **Section 3**.

5. Commencement and duration of the Services

This Contract will remain in effect from **17th October, 2017 and expire on 31st January, 2018** unless terminated earlier in accordance with the provisions of the Contract.

6. Acknowledgement

The Sub-contracting agency shall confirm acceptance of the terms of this by signing and returning to the CLIENT in duplicate copies enclosed herewith within a period of 15 days.

For and on behalf of/ acting for and on behalf of the CLIENT

Name _____
Position _____
Signature _____
Date _____

For and on behalf of the Sub-Contracting agency

Name _____
Position _____
Signature _____
Date _____

Section 2: CONDITIONS FOR SUB-CONTRACTING

1. Construction of Contract

The Contract shall be governed by and construed in accordance with the laws of India.

2. Definitions

"the Sub-Contracting agency" means the firm or organization with whom the Contract is placed.

"the Contract" means the Contract between FMC and the Sub-Contracting agency consisting of the Form of Contract and the documents listed therein.

"the Services" means those activities more particularly defined in Section Terms of Reference, as referred to in Section 3 of the Contract.

"the Project Director" means the person named in Section 4 who is responsible for issuing instructions and dealing with all correspondence in connection with the technical aspects of the Contract.

"the Contract Officer" means the person named in Section 4 who is responsible for all contractual aspects of the Contract.

"the Project Coordinator" means the person named in Section 4 who is responsible for all coordination among the team involved in technical aspect, procurement and Contract.

3. Instruction and Approvals

All consultancy assignments and contracts need to be approved by the delegated authority

4. Personnel

The Sub-Contracting agency shall communicate about the personnel to be engaged in providing the services in their proposal. The prior approval of the Project Director will have to be obtained by the Sub-Contracting agency in respect of any new person engaged. Such personnel shall perform the Services with all due diligence, efficiency and economy, in accordance with appropriate professional standards.

Nothing contained in this Contract shall be construed or have effect as constituting a relationship of employer and employee or principal and agent between FMC and the Sub-Contracting agency or any staff of the Sub-Contracting agency.

All Sub-Contracting agency personnel provided shall be suitably qualified, experienced and physically fit to carry out the work required of them. In the event that any are deemed to be unsuitable, the Project Director may, notwithstanding any prior approval, so notify the Sub-Contracting agency in writing, giving reasons for unsuitability. On receipt of such notification the Sub-Contracting agency shall without charge provide a suitably qualified and acceptable replacement for any such person with the minimum of disruption and delay to the Project in relation to which the Services are provided.

The Sub-Contracting agency shall not be entitled to substitute personnel unless the Project Director gives written consent to such substitution. Consent, to any such - substitution shall not be unreasonably withheld but be conditional upon the provision by the Sub-Contracting agency of a suitable replacement. The Contract officer shall be entitled to withdraw such consent, and to require the reinstatement or further replacement of any substituted personnel if, in the reasonable opinion of the Project Director, the replacement is unsuitable.

FMC shall not be liable to meet any costs arising from the replacement of the Sub-Contracting agency personnel who are engaged on the Contract.

The Sub-Contracting agency is responsible for all acts and omissions of persons engaged by the Sub-Contracting agency whether or not in the course of performing the services and for the health, safety and security of such persons and their property and the Sub-Contracting agency shall indemnify FMC in respect of any claim (including legal costs incurred by FMC in defending such claim) made against by such persons except where the loss, damage or claim arises out of the negligence of FMC or its employees.

5. Financial Limit

The Financial Limit under this Contract is stated in the Section 5 Schedule of Prices. No expenditure may be incurred in excess of this limit and no variants between budgets are permitted without the prior written authority of the Contract Officer.

6. Price, Payment, Fees & Reimbursable Expenses

Fees quoted for each productive day are deemed to cover the cost of salary, leave allowances, bonuses, profit, taxes, insurances, superannuation, non-working days and all other costs and expenses of whatsoever nature that may be incurred except those otherwise specifically provided for in the Contract.

Payment shall be made in Indian Rupees.

Invoices should be submitted in accordance with the specific instructions provided in the Contract.

Subject to FMC being satisfied that the Sub-Contracting agency is or have been carrying out their duties, obligations and responsibilities under the Contract, sums duly approved shall be paid within 15 days of receipt of a valid invoice.

If for any reason FMC is dissatisfied with performance of the Contract, an appropriate sum may be withheld from any payment otherwise due. In such an event FMC shall identify the particular Services with which it is dissatisfied together with the reasons for such dissatisfaction, and payment of the amount outstanding will be made upon remedy of any unsatisfactory work or resolution of outstanding queries.

Should FMC determine after paying for a particular service that the service has not been completed satisfactorily, may recover, or withhold from further payments, an amount not exceeding that previously charged for that service until the unsatisfactory service is remedied to its satisfaction.

In the event that any advance payment made is in excess of the expenditure actually incurred, FMC shall recover the amount of such excess from any further payment due.

7. Payment to Sub-Contractors

The Sub-Contracting agency shall not sub-contract any of its obligations under this Contract.

8. Corrupt Gifts and Payments of Commission

The Sub-Contracting agency warrant and represent to FMC that the Sub-Contracting agency have not:

- a. offered to give or agreed to give to any person any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the Contract or for showing or forbearing to show favor or disfavor to any person in relation to the Contract;
- b. entered into the Contract in connection with which commission has been paid or agreed to be paid by the Sub-Contracting agency or on their behalf, or to their knowledge, unless before the Contract was made, particulars of any such commission and of the terms and conditions of any agreement for the payment thereof were disclosed in writing to the Contract Officer.

Any:

- a. breach by the Sub-Contracting agency of the warranty and representation contained in clause 8.1: or
- b. commission of any offence by the Sub-Contracting agency under the Prevention of Corruption Acts in relation to this Contract shall entitle FMC to terminate the Contract and recover from the Sub-Contracting agency the amount of any loss resulting from such termination and/ or to recover from the Sub-Contracting agency the amount or value of any such gift, consideration or commission.

In clause 8.2 references to the Sub-Contracting agency includes anyone employed by them or acting on their behalf (whether with or without their knowledge).

9 Conflict of Interest

Neither the Sub-Contracting agency, their personnel, shall engage in any personal, business or professional activities, either during the course of or after the termination of this Contract, which conflict with or could potentially conflict with the Services.

The Sub-Contracting agency shall notify FMC immediately of any such activities or circumstances which give rise to or could potentially give rise to a conflict with the Services and shall advise FMC how they intend to avoid such a conflict arising.

In the event of a conflict as described in Sub-clause 9.1 above arising during the course of this Contract FMC reserves the right to terminate the Contract on giving written notice to the Sub-Contracting agency. In the event of such termination the provisions of clause 14 shall apply.

10. Commissions and Discounts

10.1 The Sub-Contracting agency shall not accept for their own benefit any trade commission, discount or similar payment or benefit, (including but not limited to air flights or other benefits obtained from travelling as passengers on particular airlines), in connection with the Contract.

11. Invoicing Instructions, Price and Payments

Invoices for work undertaken by Sub-Contracting agency in respect of the Services must be presented in duplicate.

Invoices should include a Sub-Contracting agency's letter head, the Contract reference number, the Contract name, be numbered sequentially and dated, and marked "For the attention of the Contract Officer" named in Section 4 Special Conditions and shall bear

signature on the original. The final invoice presented in connection with the Contract should be endorsed "Final Invoice".

All invoices should contain details of (i) amounts due to the Sub-Contracting Agency in terms of the Section 3 of the ToR and Section 5 Schedule of Prices;(ii) the amount received from FMC with details and (iii) the amount claimed for payment in the invoice and (iv) details of bank account to which payments are to be made.

All invoices should be endorsed as follows: "We certify that the amounts claimed in this invoice have been wholly and necessarily incurred for the purpose of the engagement and have not been claimed before".

All invoices should be signed by representative of Sub-Contracting agency who has signed the model Contract.

Any invoice not presented in accordance with the above may be rejected and in any, event shall be liable to query and delay in payment.

12 Indemnity

12.1 The Sub-Contracting agency shall exercise reasonable skill, care and diligence in the performance of the Contract and indemnify and keep FMC indemnified in respect of any loss, damage or claim howsoever arising out of or related to breach of Contract, statutory duty or negligence by the Sub-Contracting agency or the Sub-Contracting agency's servants, agents in relation to the performance or otherwise of the Services to be provided under this Contract.

13 Limit of Liability

13.1 Except where there has been misconduct, gross negligence, dishonesty or fraud on behalf of the Sub-Contracting agency or the Sub-Contracting agency's Personnel the Sub-Contracting agency's liability under this Contract shall be limited to the amount of the contracted Financial Limit.

14 Termination

FMC may, at its sole discretion, and at any time terminate the Contract and inform the Sub-Contracting agency of FMC's decision by written instruction to that effect. (Normally there will be notice period for termination). In the event of the Contract being so terminated, the sub-contracting agency shall take such steps, as are necessary to bring the Services to an end in a cost effective, timely and orderly manner.

Should the Services or any portion thereof not be carried out to the satisfaction of FMC as notified under clause 6.5 or within the time or times specified in or under the Contract,

FMC may, without prejudice to any other remedies, by notice in writing to the Sub-Contracting Agency terminate the Contract either in respect of the Services which have not been carried out in accordance with the Contract at the time of such termination or in respect of all the Services to which the Contract relates other than those carried out in accordance with the Contract before that time. In such case the Sub-Contracting Agency shall not be entitled under the Contract to payment of any amount by way of compensation.

The Contract may be terminated by FMC by notice in writing to the Sub-Contracting Agency if at any time the Sub-Contracting Agency either directly or through their servants or agents commit any breach of their obligations hereunder or being an individual or, where the Sub Contracting Agency is a firm, any partner in that firm shall at any time become bankrupt, or shall have a receiving order or administration order made against them or shall make any composition or arrangement with or for the benefit of their creditors or if the Sub-Contracting Agency being a company, an order is made, or a resolution is passed, for the winding up of the Sub-Contracting Agency, otherwise than a member's voluntary winding up for the purpose of amalgamation or reconstruction (subject to prior approval of FMC) or a receiver or administrator is appointed of the whole or any part of the undertaking of the Sub-Contracting Agency, FMC may forthwith terminate the Contract.

15. Force Majeure

15.1 If the performance of the Contract by either party is delayed, hindered or prevented or is otherwise frustrated by reason of force majeure, which shall mean war, civil commotion, fire, flood, action by any government or any event beyond the reasonable control of the party affected, then the party so affected shall promptly notify the other party in writing specifying the nature of the force majeure and of the anticipated delay in the performance of the Contract and as from the date of that notification FMC may at its discretion either terminate the Contract forthwith or suspend the performance of the Contract for a period not exceeding 3 months. If at the expiry of such period of suspension any of the reasons for the suspension still remain, FMC and the Sub-Contracting agency, may either agree to a further period of suspension or treat the Contract as terminated. In the event of the Contract being terminated by reason of force majeure, the Sub-Contracting agency shall take such steps, as are necessary, to bring the Services to an end in a cost effective, timely and orderly manner. The Sub-Contracting agency shall submit an account in writing which shall state the amount claimed taking into account all fees and costs properly incurred or committed by the Sub-Contracting agency in relation to the Contract or its termination which cannot be recovered. Always provided that payments are within the Financial Limit and not subject to dispute, FMC shall:

- a. pay all fees, expenses and other sums due and outstanding under the terms of this Contract up to and including the date of termination ("the Relevant Date");
- b. reimburse all reasonable expenses necessarily incurred by the Sub-Contracting agency after the Relevant Date in winding up the Contract.

16 Disclosure of Information and Intellectual Property Rights

The Sub Contracting agency grants FMC and its partners and associate of the Project "Scaling up Sustainable Development of MSME Clusters in India"; the European Union and the final beneficiary viz. MSMEs, Business Membership Organizations, public authorities and knowledge organizations that contributed to the production of all documents derived from the Contract or such other organizations, keeping the larger public good in mind, the right to use freely and as it sees fit all documents derived under the Contract, whatever their form, provided it does not thereby breach existing industrial and intellectual property rights.

17 Audit

The Sub-Contracting agency shall keep accurate and systematic accounts and records in respect of the Services provided in such form and detail as will clearly identify all relevant time charges in respect of fees and all relevant costs in respect of reimbursable expenditure invoiced in accordance with clause 11.4. ("The Accounts and Records").

FMC or its representatives or auditors shall, on giving reasonable notice to the Sub-Contracting agency, have the right at any time to visit the Sub-Contracting agency's offices to audit the Accounts and Records and to require the Sub-Contracting agency to produce such oral or written explanations of the Accounts and Records as it considers necessary.

The Sub-Contracting agency shall make available to the persons carrying out an audit under clause 17.1 all Accounts and Records held by the Sub-Contracting agency, or otherwise within the control of the Sub-Contracting agency, whether held on computer or, in document or any other form, and, make such copies of the Accounts and Records as these persons may reasonably require and shall give them the necessary facilities for verifying the accuracy of the Accounts and Records made available.

In the event that the results of an audit undertaken pursuant to clause 17 demonstrate that the Sub-Contracting agency have claimed any sums in respect of fees or reimbursable expenses in excess of their entitlement under the terms of this Contract, the Sub-Contracting agency shall within 30 days of a written demand by FMC reimburse FMC in full in respect of any such overpayment.

18 Settlement of Disputes

Jurisdiction for any disputes arising from and related to this Contract shall be in New Delhi, India

SECTION 3: TERMS OF REFERENCE

Terms of Reference

1. Project Title

Design and Development Low Cost Carding Machine for Namdah Weavers of Tonk, Rajasthan”

2. Background

The Namdah craft is practiced by both household and industrial units. This discussion speaks only about the household units, where we propose to focus in our project and limits itself to the carding technology where we propose to focus.

There are approximately 700 household families along with another 2000 workers are dependent on this craft. Most of these enterprises follow a process which is neither technologically sound nor hazard free. In this Namdah craft, felt is basic sheet which requires to be prepared for craft making. Felt making process is absolutely manual at the household level.

To start with, through the willowing machine, dust is cleared from the wool. The process is environmentally and socially non friendly as lot of dust pollution is occurred. There is no technology to arrest/control the dust which causes breathing as well as skin related problem.

Carding/Opening

The household units actually have an opening, rather than a carding machine, although they locally call it as a ‘carding machine’. Once the initial dust is removed through willow technology, then the wool runs through the opening machine/opener. At this stage, wool is segregated and further dust is cleaned from the wool. However the machine has very limited feeding capacity of wool and because of slow driving system, the existing machine cannot segregate the wool quickly. Poor wiring system in opening roller provides below standard fibre quality. The wastage in wool and fibre loss is approximately 30 percent.

Household enterprises do not have any technology to prepare the felt sheet, the actual carding process. Hence the entire process is done manually. Therefore it is time taking process and lot of physical labour is involved which results in ergonomic problem. The loose wool is pressed with a willow bat and sometimes with hand also. Soap water is spread over the wool sheet and the sheet is rolled time and again to get the shape of the sheet and binding of wools. Available Carding machine is used by large industries which cost approximately Rs 8 lakh-15 lakh. Household enterprises cannot afford this high price and there is absence of low cost carding machine.

Hence in this project we are proposing to develop a low cost affordable Carding Machine for household enterprises. Through developing of a new carding machine, complete manual process

of felt making will be converted into semi automatic carding machine based. It will help in increase in productivity, quality improvement and reduction in health hazards. However since not all household enterprises will immediately shift to the new semi-automatic carding machine, improving the existing opening machine will ensure reduction in wool and fibre wastage, better segregation, increase in capacity of wool segregation.

2. Objective

- To Design and develop a **low cost Carding Machine** for household enterprises which will enhance the productivity by 30%-50%, as the manual process of felting will be converted through semi automated carding machine. This will not only enhance the productivity but also solve the ergonomic and health hazards in the process. Since the structure of the felt is prepared by hand hence they are required to press by a bat on a continuous basis for required fibre to fibre bonding. This requires continuous change in working postures of the artisans/workers which results in back/shoulder pain. Further, once the structured felt sheet organised it requires continuous rolling to give a better shape. This is done in a long bending posture. The semi automated carding machine has been proposed to keep in mind the affordability of the household enterprises.
- Introduce **changes in existing “Carding Machine”** for better wool Segregation and reduction in wastage. The changes will be improved feeding system, modification in feed lattice, modification in driving system, improved wiring system in opening rollers, developing ducting system for proper feeding to carding system.

3. Scope of Work

- 1) Modification of existing carding machine with delivery schedule, accumulation box made of MS sheet metal with wire mesh top cover for easy removal of opened fibre.
- 2) Side cover will be hinged door type.
- 3) Synthetic feed apron and safety cover for all the driving components.
- 4) Newly designed roller and clearer card suitable for wool waste processing.
- 5) 3 pairs of workers and stripper, pair of feed rollers clothed with metallic wire, single cylinder and single doffer mounted with metallic wire with stripping roller with flutes for smooth delivery.
- 6) All the rollers must be dynamically balanced.
- 7) Machine must be completed with synchronous driving system to process Wool Waste.
- 8) Delivery material will be in the form of fibre Batt suitable for Namdah Carpet manufacturing.
- 9) Technology need to be successfully tested in one of the namdah making household unit in Tonk, Rajasthan
- 10) Provide training to at least 10 household enterprises on newly developed carding machine.
- 11) Provide a End of Project Report

4. Methodology

- 1.) Understanding Project requirement from TIT&S
- 2.) Prepare a concept note/workplan for developing the technology
- 3.) Visit to Tonk to understand and observe the existing procedure
- 4.) Development of new low cost carding machine in consultation with TIT&S
- 5.) Prototype developed
- 6.) 1st Cycle of testing of prototype in one of the namdah carpet making household unit in Tonk
- 7.) Modification in the technology, if required
- 8.) Test and Final approval of technology through TIT&S
- 9.) Provide training to 10 Household enterprises on newly developed carding machine
- 10.) Submission of End of Project Report

5. Expected Outcomes /deliverables

1. Development of low cost carding machine which is approved by stakeholders of Namdah Cluster of Tonk, Rajasthan financially as well as technologically

6. Competency and Expertise Requirements

- a) Bidder should preferably have experience of developing customized textile machines for various Natural fibre processing from Raw fibre to yarn.

- b) Bidder should preferably have experience of handling research project jointly with Indian Institute like IIT/NIIT or institute of equivalent status. (At least 1 similar type of Project in accordance with this Project)
- c) Bidder should preferably have qualified technical work force for erection, commissioning and trial run of the machine at site (at least 1 example)
- d) Bidder should preferably have technically qualified person (minimum B.Tech/B.E) to conduct the training to the end users of the machine.
- e) Annual turnover of 20 lakhs for previous financial year.
- f) Delivered at least 1 Project of Rs 5 lakh or more
- g) Previous 3 years of financial audited statement
- h) GST number

7. Reporting Requirements

Important: All inputs are to be provided to TIT&S

1. Submit the methodology/workplan
2. Submit a status report after 1st visit to the cluster
3. Monthly Report on work completion status as per work plan
4. Make presentations to the stakeholders
5. Need basis presentation/report to TIT&S
6. Submission of End of Project Report

8. Time-frame

ITTs issued	19 th September 2017
ITTs submitted	10 th October 2017 at 5 pm
Technical bid opening	16 th October 2017 at 12 noon
Commercial bid opening	16 th October 2017 at 3 pm
Evaluation and Selection of preferred bidder	16 th October 2017
Contract signing	17 th October 2017

9. Technical Evaluation Criteria

Sr. No	Criteria	Weights
1	Experience and Knowledge in Textile based Technology	50
1a	Knowledge of Textile Sector and Technology	25
1b	Experience in doing similar Projects	25
2	Experience and Knowledge in “Textile based MSMEs”	30

2a	Knowledge of Textile based MSMEs	15
2b	Experience in working with MSME based units	15
3	Understanding of the ToR by the Tenderer	10
4	Methodology proposed by the Tenderer	10
	Total	100

Techno commercial scoring

Technical bid scoring

For selecting the winning Technical bid, Relative Technical Score (RTS) method will be used for evaluation of ITT as detailed below:

Relative Technical Score for each Implementing Agency: - (A)

$$\text{RTS} = T / T_{\text{high}} * 100$$

Where,

RTS = Relative score for Technical Proposal of each Implementing Agency

T = Technical score of the current proposal

T_{high} = Highest technical score obtained

Commercial bid scoring

The Commercial bids Relative Commercial Score (RCS) for each Implementing Agency will be calculated as given below:

Relative Commercial Score for each Implementing Agency:

$$\text{RCS} = L1 / L * 100 - (B)$$

Where,

RCS = Relative score for Commercial Proposal of each Implementing Agency

L = Amount quoted by the current proposal

L1 = Lowest Amount quoted by L1 proposal

Calculation of Combined Score for the Final Selection

For the final selection, a combined score based on techno-commercial evaluation will be arrived at as follows:

$$\text{Combined score} = \text{RTS} * 0.75 + \text{RCS} * 0.25$$

The proposal having highest combined score will be declared as the preferred bidder and eligible for award.

11. Payment terms

Payment of consultancy fee will be made as per the following schedule:

S No	Stage	Payment terms
1.	On signing of Contract	50%
2.	Final Approval of Prototype after successful Testing and Training of 10 Household Enterprises	25%
3.	Submission of End of Project Report	25%

The implementing agency would lodge the invoices for payment of consultancy fee as per the schedule mentioned in point 11.1 above.

FMC reserves the right to make need based changes in the above payment policy.

12. Timeframe: The Contract will be for the period of **5 months**. The Contract may be extended, which FMC will review and confirm at appropriate time during the course of implementation.

Section 4: Special Conditions

1. In the eventuality of the selected agency not being able to perform the agreed tasks; mobilize the proposed team; discard the project mid-way etc; FMC reserves the right to take appropriate action (including legal action; blacklisting the agency for any Contract award by FMC or its partners, etc.).
2. Jurisdiction for any disputes arising from and related to this Contract shall be in New Delhi, India
3. FMC officials responsible for this Contract:

Dr. Tamal Sarkar
Director, FMC
USO Road, New Delhi

4. TIT&S officials responsible for this Contract

Dr. K.N. Chatterjee
Head, Deptt. Of Fashion & Apparel Engg, TIT&S
P.O.- Birla Colony, Distt.- Bhiwani
Haryana-127021
Telephone: 01664 242561
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